

JOURNAL

OF THE

AMERICAN VETERINARY MEDICAL ASSOCIATION

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Volume CXVI

APRIL 1950

Number 877

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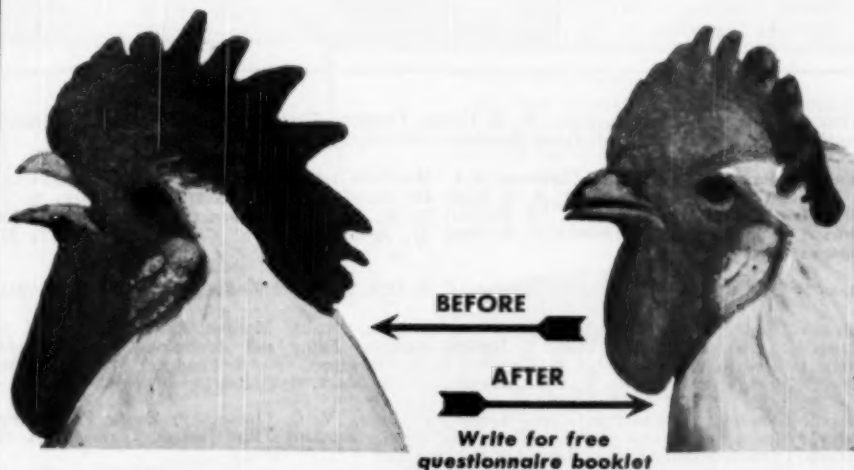
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1. Antihistamines in the Cow and Horse—Cornell Vet. (Oct.) 1949, p. 353.
2. Allergy and Antihistamine Therapy in Veterinary Practice—Vet. Med. (Dec.) 1949, p. 489.

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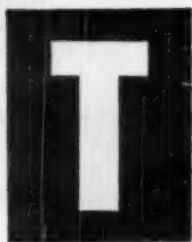
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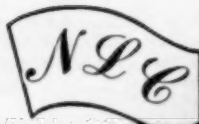
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AVMA ☆ Report

Veterinary Medical Activities

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◆ "Reviews of Veterinary Medical Films" is a new column in this issue of the JOURNAL. It will present a brief description of films available for showing at veterinary medical meetings or by veterinarians to lay groups. Each review will indicate where the film may be obtained.

◆ President C. P. Zepp, Sr., and Executive Board Chairman W. G. Brock presented papers at the Colorado A. & M. College Veterinary Conference at Fort Collins, Feb. 20-22, 1950.

◆ The weekly AVMA radio scripts, available to state and provincial associations for use by their members, can help every association with its public relations problems. A Canadian veterinarian who uses them writes: "I wish to thank you sincerely for the great service which the AVMA is rendering." We are prepared to render the same service to you.

◆ The AVMA Committee on Therapeutic Agents and Appliances met in Chicago on March 4. The discussion revolved around an outline to be used in considering applications from commercial firms for approval of pharmaceutical products, instruments, or appliances. The Council on Pharmacy and Chemistry of the American Medical Association, and its "New and Nonofficial Remedies," provide a pattern and a goal.

◆ The annual convention, Miami Beach, Aug. 21-24, 1950, shifts into high gear with a trip to Florida by Executive Secretary J. G. Hardenbergh. The activities of the Committee on Local Arrangements will be integrated with those of the staff members of the Chicago office, of the Committee on Program, and of the several additional individuals and groups most closely involved in making this Eighty-Seventh Annual Convention an outstanding success.

◆ The Convention Tour is so inclusive, and yet so flexible, that it should attract numerous members. See the story on the "News" pages, and make definite plans to attend the Convention and participate in the preconvention tour to Washington, D. C., and through Florida, and also the postconvention tour to Havana.

◆ Members frequently ask the Chicago office to supply talks suitable for presentation before civic groups of various kinds. Skeleton facts have been supplied, and just recently these have been amplified with a few projection slides to help tell the story. The idea is popular, but we need pictures from which to make additional slides. Send us a glossy print of any picture which will help tell the story of the diversity and every-day importance of veterinary medicine.

◆ Dr. C. D. Van Houweling, director of professional relations for the AVMA, met with the Executive Board and the Public Relations Committee of the Indiana Veterinary Medical Association on Feb. 19, 1950, for the purpose of counselling with them relative to their association public relations activities.

◆ Dean H. D. Bergman, Iowa State College, and Dean C. S. Bryan, Michigan State College, chairman and secretary, respectively, of the Association of Deans of American Colleges of Veterinary Medicine, spent February 16 at the AVMA office discussing problems of mutual interest to the two groups.

◆ Dr. W. E. Logan, AVMA representative to the National Livestock Loss Prevention Board, and Dr. G. H. Mydland called at the office while in Chicago for the annual meeting of the above group.



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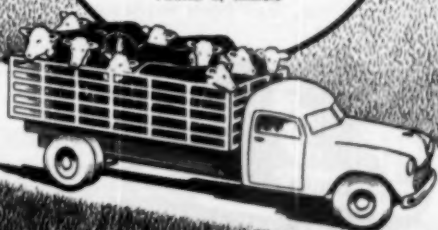
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Rupel, Bohstedt & Hart, University of Wisconsin,
Jour. of Dairy Science, Vol. 26, Aug., 1943.

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Swift et al, Pennsylvania State College,
Jour. of Animal Science, Vol. 6, Nov., 1947.

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Dinning, Briggs and Gallup,
Oklahoma Agricultural Exp. Sta.
Jour. of Animal Science, Vol. 8, Feb., 1949.

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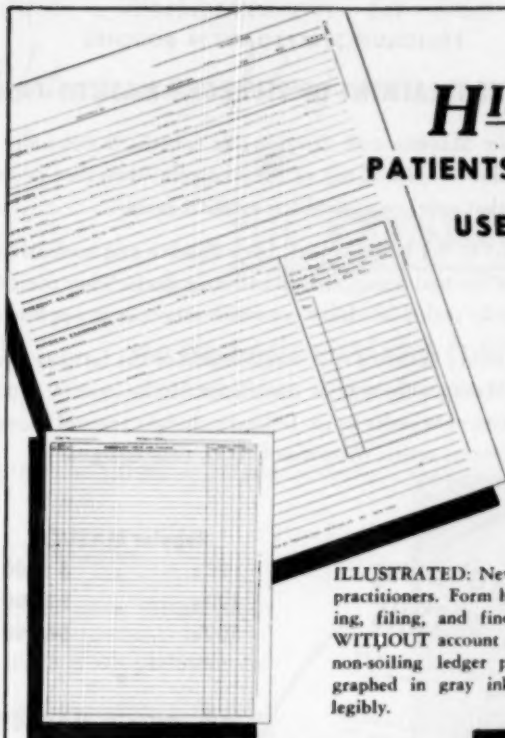
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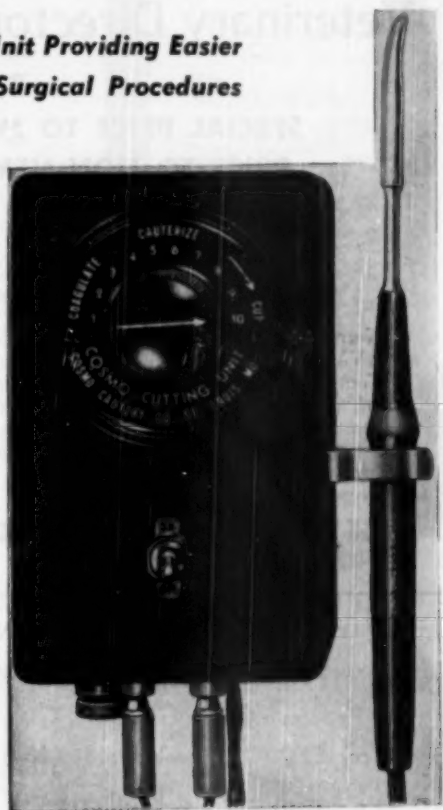


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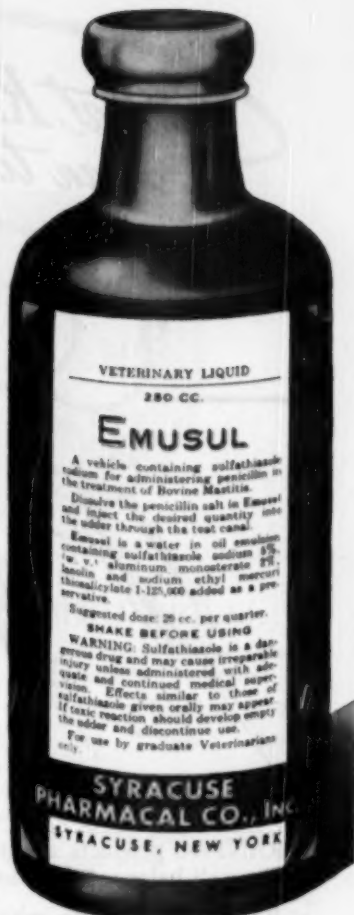
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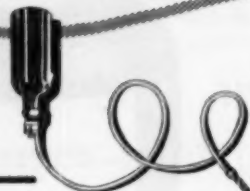
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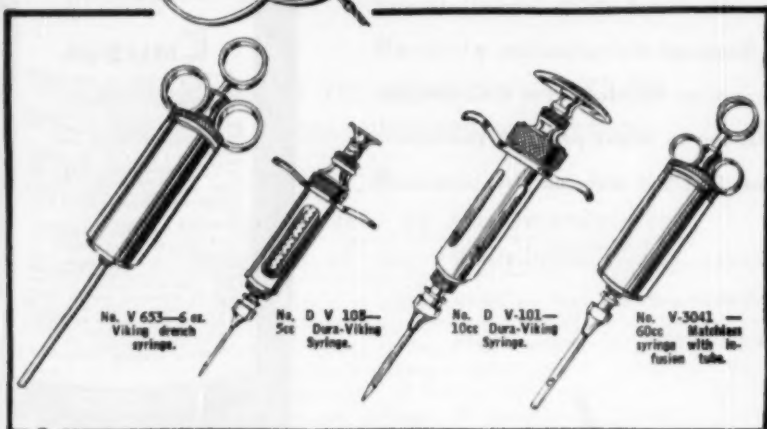
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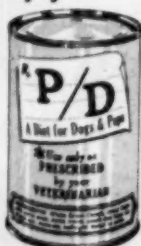
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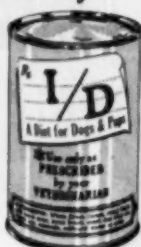
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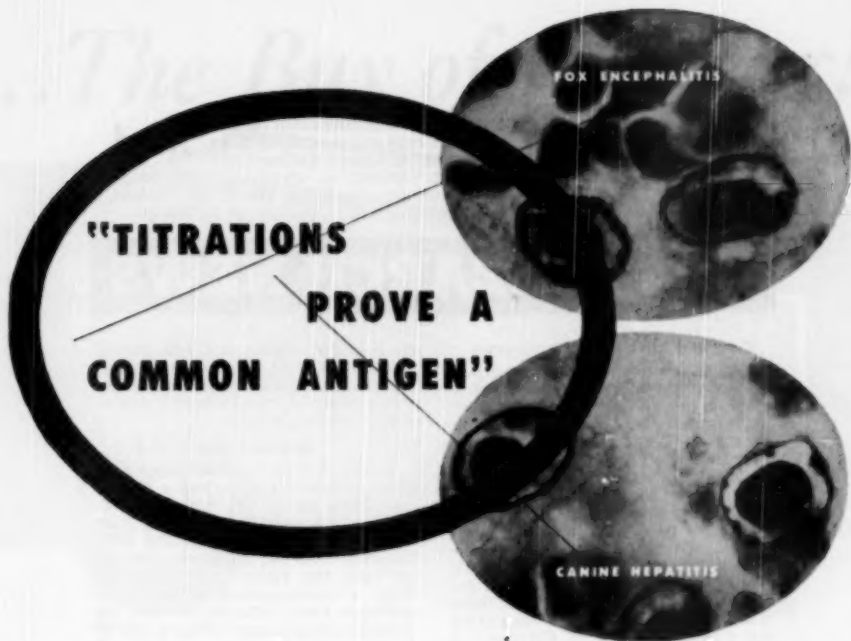
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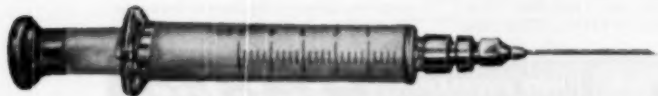
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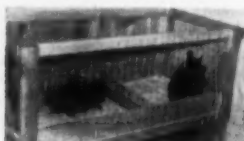
No. 4

DOG RESEARCH NEWS

Care of a Bitch During Pregnancy

Be sure to prepare a whelping pen or box 10 days before the whelping bitch is due. At first she will probably ignore the box, even sleeping or sitting as far from it as she can get. But when labor starts, she will usually accept this convenience. For the small breeder, a box may be used for whelping, but the better system is to have a pen (see cut). It is important that during pregnancy, we keep the bitch in peak condition by feeding her a good ration. Many famous mothers have whelped famous sons and daughters on a prenatal diet of Friskies — a nourishing, complete dog food.

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APRIL, 1950

NO. 877

The Malpractice Problem

LOUIS J. REGAN, M.D., LL.B.

Los Angeles, California

MALPRACTICE constitutes a very real threat to the members of all of the healing professions. Doctors of medicine were the first and still are the primary targets. In 1937, about 4,000 physicians were sued for malpractice in the United States. The plague spread to involve dentists, osteopaths, chiropractors, naturopaths, and nurses. With war prosperity, the incidence of malpractice claims decreased somewhat but since the war, the malignant trend is again clearly manifest.

Public confidence in the professions is seriously affected by the ill-will and misunderstanding engendered by these frequently unfounded and sometimes malicious onslaughts against our practitioners. In another period of economic recession, or depression, it must be anticipated that the number of claims will greatly increase.

Veterinarians are not immune. It is true that they have not yet been seriously affected; however, they have been involved in suits. Veterinarians would be wise to recognize this problem and its potential significance and to act for their own protection.

Those of us who have been on the firing line have been forced to realize that there is no malpractice Santa Claus; that the malpractice problem will be solved only by our own affirmative and purposeful efforts. Our experience, locally, affords incontestable proof that the bringing of unjustified malpractice actions against practitioners can be made unprofitable.

The law requires that every person act with due or ordinary care toward his fellows. Failure so to act constitutes negligence. Due or ordinary care means the

degree of care commonly possessed and exercised by the ordinarily prudent person in the conduct of his own affairs. Each of us must meet that standard. Anyone may be adjudged negligent if he fails to do something that the average person would do, or does something that the average person would refrain from doing in the same circumstances.

There is a legal standard, too, which the professional man must meet in carrying out his professional activities. The standard is always what the ordinary, reputable practitioner, in the same field of practice, in the same or in a similar locality, would do and what he would refrain from doing in caring for a similar case.

The failure of a practitioner to meet the standard of practice, with injury resulting to his patient, constitutes professional negligence. This is called malpractice.

The principles of law which are applicable in a malpractice accusation, and in the trial thereof, are the same regardless of whether the defendant is a physician, dentist, or veterinarian.

Whenever any practitioner undertakes to render professional services, the law burdens him with certain obligations. The practitioner must possess the degree of skill and knowledge commonly possessed by other reputable practitioners in the locality; he must exercise the degree of care, attention, diligence, and judgment such as would commonly be exercised by other reputable practitioners in the locality in the care of similar cases; he must utilize accepted methods of treatment, not wandering into fields of experimentation; and he must have been authorized to administer the care and treatment. These obligations constitute the legal duty of the practitioner.

No greater degree of skill and care is

Presented before the California State Veterinary Medical Association, Santa Monica, June 21, 1949.

required of a practitioner in diagnosis than in treatment. No inference of negligence arises from the mere failure to make a correct diagnosis. It must be further established that the failure to make a correct diagnosis was due to the failure on the part of the practitioner to possess or to exercise the required degree of skill or care or diligence. In this connection, there is the case in which a veterinarian made a clinical diagnosis of rabies in a dog. The diagnosis was confirmed by a consultant. Treatment was started on an individual who had been bitten by the animal. The dog was destroyed. Laboratory investigation was negative. A malpractice action resulted. The judgment handed down was that the clinical diagnosis was justifiable and sufficient.

In passing, let it be pointed out that the use of a consultant always affords a great degree of protection. Malpractice suits are rarely lost wherein it is shown that an independent consultant was in contact with the case during what is established to have been the critical period.

Considering his legal duty, it may be seen that a practitioner may be accused of, or in fact may be guilty of, malpractice because of: (1) his ignorance; (2) his negligence; (3) his failure to follow standard, acceptable practice; or (4) his failure to secure consent to operate or to render other treatment.

A practitioner is not liable for an error in judgment, unless it is negligently made. If there are two or more approved methods of treatment of an injury or disease, he may adopt the one which, in his honest opinion, will be the more efficacious and appropriate under all the circumstances. In such a case, he is not liable for any injury resulting from an error of judgment, if there is one. He is not bound at his peril to adopt a particular method unless there is, in a given case, but a single, universally approved and accepted procedure. But the practitioner cannot excuse himself on the theory of mere error of judgment if he fails to inform himself of facts by a proper examination, or if he fails to use ordinary care in applying his treatment. Obviously, there is a distinction between making a choice of one or two or more procedures and negligently applying the particular procedure after it has been selected. A practitioner is justified in his selection of a method of treatment if it is one that would be approved by even a respectable minority of his reputable colleagues in the locality.

Let it be repeated that, in the final analysis, actionable negligence or malprac-

tice consists solely in the practitioner doing something he should not do or in omitting to do something he should do, measured against what the standard, reputable practitioner would do or would refrain from doing in the care of a similar case. Whether a practitioner is to receive a fee or is to render his services gratuitously in no way affects his legal duty.

Specifically, in reference to the legal duty of a veterinarian, in a Nebraska case,¹ the court said that a veterinarian, in the absence of a special contract, engages to use such reasonable skill, diligence, and attention as may be ordinarily expected of persons in that profession; and that he does not undertake to use the highest degree of skill, or an extraordinary amount of diligence.

A practitioner is not an insurer of results unless he makes himself one by his special agreement or undertaking. It is unwise to promise too much or to guarantee a cure or any particular result. In a Minnesota case,² a veterinarian was sued on the allegation that he had agreed to effect a cure.

By his special contract, a practitioner may limit or he may extend his legal duty. Thus, he may agree to treat a case only for a particular condition, or at a particular place, or for a limited time. On the other hand, as has been pointed out, he may broaden his obligation and his liability by specially contracting to effect a certain result. In the latter event, if he fails to produce the warranted result, he becomes liable therefor on his contract and, in defense, it would be immaterial that he had exercised the highest degree of skill and care.

For a practitioner, it is a miserable experience to be sued for malpractice. His reputation and his professional integrity are assailed and put in jeopardy. The mere filing of a malpractice suit is injurious to him. It is altogether different, for example, to be sued for allegedly negligent driving of an automobile. Further, in addition to the mental and emotional stress, there is the loss of time and the mounting burden of cost associated with the increasing number of these claims.

It should be understood, too, that most of the malpractice claims brought against members of the healing professions are not honestly and factually justifiable. Moreover, the targets of these actions are not exclusively, or generally, charlatans or quacks. On the contrary, more than half of the defendants are found to be, in their

¹Barney v. Pinkham (Neb.) 45 N.W. 694.

²Lyford v. Martin (Minn.) 82 N.W. 479.

respective fields of practice, above the average in experience, reputation, and ability. This is understandable for the practitioner who has most to lose will likely be the easiest to shake-down. He is the one most likely to be hurt by publicity. He is the one most ready to buy his peace, that is, to make a settlement in order to conclude the matter quietly.

It is clear that no practitioner can be justly accused of malpractice if he cares for his patients with meticulous attention to the requirements of good practice. However, no course of conduct on his part can safeguard him from an unjustifiable malpractice claim or suit. Whenever there is, following the rendition of professional services, a less than perfect end-result, a potential malpractice claim exists. A poor result, plus the unfounded suggestion that the treatment administered was at fault, equals another malpractice claim. That is not a pretty equation, but it is seen distressingly often. It may be that there is little that can be done to remove the factor of poor result from the equation, but it should be possible to eliminate the factor of criticism.

In a recent case, a veterinarian's wife was the owner of a sales barn. The veterinarian approved the health condition of certain steers which a farmer bought. Apparently, some of the animals had "shipping fever." Another veterinarian, who was called in, harshly criticized the skill and care of the first veterinarian. A suit resulted. It has not yet been concluded. The factor of criticism clearly appears in this case. More than 75 per cent of all malpractice cases are precipitated by the criticism by one practitioner of the work or the result obtained by another practitioner.

It is obviously of the most vital importance that destructive criticism be stopped. Each of us should ask himself, "Is it ever ethical to criticize the work or the result obtained by another practitioner until, and unless, we are in possession of all the facts of the particular case? And does this not require that, before we pass judgment or express an opinion, we must also have the practitioner's story?"

There will be few nonmeritorious malpractice actions when we, each and every one of us, refrain from unethical and destructive criticism.

In the case just discussed, as a by-product, veterinarian 1 has filed, within his association, charges of unethical conduct against veterinarian 2. Action in respect to this charge is being held in abeyance until the legal issues have been determined.

Another sidelight in connection with this case is worthy of special mention. Experience shows that not infrequently, when a malpractice suit is precipitated by the criticism of a practitioner of his predecessor's work on a case, the bill for professional services put in by the instigator of the suit is very high. It seems that, sometimes at least, a profit motive is associated with, if it does not prompt, the destructive criticism. In the above case, veterinarian 2 presented a bill for \$1,000.

Consent for operation or for other treatment must always be obtained. The legal owner is the usual source of proper consent for work on an animal. However, while no confirming case has been found in the law reports, it is believed that an analogous principle of law would be applicable whereby, in emergency situations, a veterinarian would be justified, without specific consent, in doing whatever would be reasonably indicated to preserve the life of an animal. Whenever a particular procedure, such as vaccination or the destruction of a suspect animal, is required by law, the law itself supplies the consent. Oral consent is valid, but because of ease of proof written consent should invariably be required.

With reference to the consent problem, a recent case is of interest. A veterinarian received a telephone call one evening. He was told of a 16-year-old Chow, blind, deaf, and generally failing. He was asked if he would do away with the animal. He agreed, and it was arranged that the Chow would be brought to him at once. Shortly thereafter, some people entered his office accompanied by an elderly Chow. The animal was, without further ado, placed on the table and given nembutal intravenously. One of those who had come with the dog asked, "Will his troubles be over now, Doctor?" The doctor replied that his troubles were over. Then the question, "Will he be all right when he wakes up?" When the doctor told them that the dog wasn't going to awaken the trouble began. The situation was distressingly clear when, at that moment, some other people entered the office, saying, "This is the Chow about which we spoke to you on the telephone." What do you think happened? That's right—a suit.

It is suggested that a written consent for euthanasia should invariably be obtained.

The statute of limitations provides a time after which specified actions cannot be brought. Tort actions must be brought within one year after the time of the allegedly negligent act or omission. Malpractice actions are tort actions. The

statute provides a longer time during which actions on contract, such as a suit to collect a professional bill, may be brought. It should be borne in mind, therefore, that in some instances, waiting a certain time before suing for a bill may prevent the filing of a retaliatory malpractice action.

A practitioner is not only liable for his own acts but also for the acts of a partner or of an employee, in so far as such acts occur within the scope of the partnership or of the employment. Care should be exercised in the selection of assistants and in the delegation of duties to them.

Due to our very methods of practice, there is rarely anyone who is in a position to testify on behalf of the practitioner as to what he did or said at any particular time or place when rendering his professional services. As to what he did, his case records are of vital significance. As to what he said, words may be, and frequently are, put in his mouth. No statement should be made to the animal's owner, or to anyone else, that may possibly be construed as an acknowledgement of fault on the part of the practitioner. No claim, or threat of a claim, should be discussed with anyone until legal advice has been taken; and advice should immediately be sought whenever even the shadow of a threatening situation presents itself.

Whenever a practitioner responds to a request that he render professional services and enters thereon, he is legally bound to give, or to see to it that there are given, such services as the case requires until they are no longer needed, unless he is discharged or he withdraws from the case. Reference is made to the case wherein a veterinarian dehorned a bull. That evening he was advised, over the telephone, that there was still bleeding. The veterinarian instructed that the bull, which was at that time in the barn, be put out of doors. The animal was dead next morning. A suit resulted. There must be, in all cases, sufficient observation, sufficient treatment, and sufficient follow-up, in accordance with the standard of practice, in the exercise of good professional judgment.

The ordinary malpractice case must be established in court by means of expert testimony. The lay witness may testify concerning things which were actually done; but as to the propriety of those things, the expert is the only legitimate witness. What constitutes good practice, either in diagnosis or in treatment, is a question for the expert witnesses and can be determined only by their testimony. As to matters which are within the common knowledge and understanding of lay-

men, no expert testimony is necessary or required.

In the typical malpractice case, veterinarians, as expert witnesses, are arrayed on opposite sides in the lawsuit. Obviously, they generally disagree in their expressed opinions. Otherwise, there would have been no suit, for someone must be found by the plaintiff to condemn, in effect, the procedure that was followed by the defendant.

The experts on both sides are expected to deal with the issues fairly and honestly. Nothing should be asked of the expert for the defense except truthful and unbiased testimony. If he is to be of benefit to the defendant, he must create the impression of impartiality, which he should strive to possess.

The expert witnesses called to testify in a malpractice suit generally have no first-hand knowledge of the facts of the case. They are usually called upon to express an opinion in reply to a hypothetical question. This form of question assumes the existence of the facts recited in it, and the assumptions presented are based upon the evidence which has been offered in the case. The question may be framed upon any theory of the questioning party and may include any facts, within the limits of the evidence, upon which the opinion of the expert is desired. It is held that the hypothetical question must not be unfair or misleading and must not assume facts in conflict with undisputed evidence.

Section 1873 of the California Code of Civil Procedure makes provision for the appointment of experts by the court. This may be done by the court upon its own motion, or by the court upon the motion of either party.

CONCLUSION

If we are to succeed in remedying the shocking and vicious malpractice situation, practitioners must learn what they may do to safeguard themselves, and must put into effect every possible precaution against unjust malpractice accusations. The vast majority of malpractice suits can be avoided by scrupulous attention to the requirements of good practice, by good record keeping, and by an equally scrupulous care for the reputation of fellow practitioners.

One-half milligram of stilbestrol daily for ten days followed by a ten-day period of no treatment and then ten more days of treatment at the same dosage level is effective for urinary incontinence in spayed bitches.—R. E. Ruggles, D.V.M., Illinois.

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S. L. ZARGAR, M.S., G.B.V.C.

Nagpur, India

THE MAIN object of this paper is to give a bird's-eye view of the major contagious cattle diseases prevalent in the Indian Union. It is true that methods of disease control usually follow a similar general pattern in all parts of the world. Special attention must, however, be paid to local conditions and the methods must be modified accordingly. In the past, we have been doing little beyond attending to actual outbreaks. On an average, we record 10,324 outbreaks of rinderpest, 6,681 of hemorrhagic septicemia, 4,313 of black quarter, and 1,903 of anthrax in the Indian Union, resulting in a recorded mortality of 1,500,000 cattle per year (tables 1 and 2). Probably, the mortality and losses are much higher. We need to know much more about the various aspects of these outbreaks.

It is hoped that this paper will assist in correct appreciation of available knowledge and give a better conception of cattle disease problems in various provinces and states. Undoubtedly, each province and state has its own problem but, as far as cattle epizootics are concerned, they can be tackled with a commonly accepted plan. The civil veterinary departments of several provinces and states in the Indian Union are engaged in combating cattle diseases, particularly rinderpest, hemorrhagic septicemia, black quarter (blackleg), and anthrax. Ill-equipped, under-staffed, with meager facilities and scant popular appreciation, they have been fighting their battle with available weapons for the last fifty years. Within the last two decades, fairly effective serums and vaccines have become available; yet, these diseases con-

tinue to take heavy toll in all parts of the world, including the Indian Union, and by their onslaught contribute toward the chronic indebtedness of the poor farmers in India. We can not hope to place the livestock industry in the Indian Union on a sound foundation as long as these diseases continue to deplete our herds.

MAJOR CATTLE DISEASES IN THE INDIAN UNION

The incidence of major cattle diseases in the Indian Union follows.

Rinderpest.—There is no province or state in the Indian Union which is free



Fig. 1.—Figures indicate average mortality recorded per 100,000 cattle per year (1940-1941 to 1945-1946).

Deputy director of veterinary services, Central Provinces and Berar, Nagpur, India. In 1949, Dr. Zargar was on deputation to the United States for postgraduate study at the University of Minnesota, St. Paul.

I wish to express my great indebtedness to Dr. H. B. Shahi, M.Sc., M.R.C.V.S., D.T.V.M., director of veterinary services Central Provinces and Berar, for help in securing the required information from the director of veterinary services of other provinces and states. I am grateful to them and their field staff for their coöperation and help. I am equally indebted to Dr. William L. Jellison, Ph.D., parasitologist, Rocky Mountain Laboratory, Hamilton, Mont., for reviewing the manuscript. My thanks are also due to Miss Katherine Schall, B.A., for help in preparation of the manuscript.—S.L.Z.

from this dreaded epizootic. An annual average of 10,269 outbreaks of the disease are recorded in the Union (excluding those states which have not been included in this paper for want of proper information), resulting in mortality of about 100,000 cattle per year. Probably, the mortality and losses are much greater.

The number of animals dying in any outbreak averages between 3.7 to 14.4. Mortality per 100,000 head of cattle in various states and provinces varies between 18 to 342 head. Mortality per 100 square miles varies from 1 to 82. During the past five years, Mysore, Bombay, As-

sam, Madras, and Bengal have suffered most from this disease (see fig. 1).

On an average, the outbreaks of rinderpest attended by a veterinary assistant surgeon vary between 2.8 to 11.6 per year. Percentage of cattle protected against the disease varies between 0.8 to 7.2. In other words, 93 per cent of the cattle are al-

Indian farmer is rinderpest. His economic progress is correlated with the increased or decreased incidence of this disease.

Hemorrhagic Septicemia.—This disease is second in importance. On an average, 6,680 outbreaks of the disease are recorded per year in the 11 provinces and states included in this study, resulting in the loss



Fig. 2—Figures indicate average mortality recorded per 100,000 cattle per year (1940-1941 to 1945-1946).



Fig. 3—Figures indicate average mortality recorded per 100,000 cattle per year (1940-1941 to 1945-1946).

lowed to face outbreaks without any protection. With the available staff, if we have the will, the incidence of the disease can be reduced further. Quarantine stations do help in stopping the ingress of infection.

Recorded losses in cattle, in the Indian Union, are valued at Rs. (rupees) 5,000,000 annually from this disease alone, taking the average value of an animal at Rs. 50/-. Probably the losses are much more. It is estimated that in even 11 provinces and states included in this survey, the annual loss to the livestock industry is about Rs. 5 crores (50,000,000) per year. One of the causes of the chronic indebtedness of the

of about 36,000 head of cattle. The disease has a seasonal incidence and, in most of the provinces, it starts with the onset of rains, reaches its peak in July or August, and gradually decreases with the close of the rainy season. While the disease is enzootic in certain areas, some provinces are practically free from the infection.

The average number of deaths in each outbreak varies between 2.7 to 20.9; the mortality per lakh (100,000) of cattle, between 7 to 79 head; and the mortality per 100 square miles, between 0.6 to 4.9. During the past five years, Punjab, Bombay, Kashmir, Madras, and Central Provinces and Berar have suffered most. Probably,

TABLE 1—Cattle Population in the Indian Union (1945)

Serial No.	States & provinces	Cattle population	Area in sq. mi.	Total No. of villages	Density per sq. mi.	Ave. cattle population per village
1.	Kashmir	2,801,768	84,471	9,121	33	308
2.	*Punjab	15,510,283	136,330	38,000	113	403
3.	United Provinces	37,619,205	112,323	102,308	355	367
4.	Bihar	14,152,163	69,348	78,437	205	180
5.	*Bengal	23,699,633	82,876	36,000	261	421
6.	Assam	5,767,243	67,334	31,382	86	186
7.	Bombay	6,922,924	76,443	22,685	91	304
8.	C. P. & Berar	13,677,205	118,710	38,985	115	340
9.	Orissa	4,587,982	32,198	27,549	156	178
10.	Madras	23,044,597	124,363	70,000	194	329
11.	Mysore	4,990,520	29,483	16,457	172	297

*Inclusive of West Punjab and East Bengal.

in these areas we need to tackle the disease thoroughly (see fig. 2).

Annually, an average of 0.5 to 12.9 outbreaks of hemorrhagic septicemia are attended by a veterinary assistant surgeon. The percentage of cattle protected against the disease hardly exceeds 2 per cent of the total cattle population in any province. This means that about 98 per cent of the cattle are allowed to take their own chance in the struggle for existence. There is evidence to suggest that the incidence of the disease in certain areas is correlated with rainfall and other meteorologic conditions. This aspect of the disease needs further investigation. In the rainy season, when sowing and other agricultural operations are in full swing, we lose an appreciable number of promising cattle from this disease. The annual recorded losses are Rs. 200,000 per year. Probably the losses are much more. It is estimated that from this disease alone we lose cattle worth Rs. 20,000,000 per year and most of them are promising buffaloes which, if protected, could be saved.

Black Quarter (Blackleg).—This disease is third in order of importance. On an average, 4,313 outbreaks of the disease are recorded per year in the 11 provinces and states included in this study, resulting in mortality of about 16,431 head of cattle. The disease has a seasonal incidence and in a majority of the provinces, it starts with the onset of rains. It is enzootic in certain areas, while other areas are practically free from it. In Central Provinces and Berar, while high incidence of the disease is recorded in the wheat tract, the rice tract seems to be free from this infection.

The average number of deaths recorded in each outbreak varies between 2.2 to 12.7; mortality per lakh of cattle, between 0.4 to 76.2; and the mortality per 100 square miles, between 0.01 to 12.9. During the past five years, Mysore, Madras, Bombay, and Central Provinces and Berar have suffered most from this disease (fig. 3).

Annually, about 0.1 to 12.5 outbreaks of black quarter are attended by a veterinary assistant surgeon. Percentage of cattle protected against the disease is only 0.1, leaving 99.9 per cent to take their chances with the disease. There is evidence that the incidence of the disease is correlated



Fig. 4—Figures indicate average mortality per 100,000 cattle per year (1940-1941 to 1945-1946).

with soil, rainfall, and other meteorologic conditions. It appears that the incidence of the disease in all rice-growing tracts is almost negligible. Year after year, we lose cattle worth Rs. 800,000 from this disease, and most of them are promising young calves.

Anthrax.—This disease is fourth in order of importance. On an average, 1,903 outbreaks of the disease are recorded in the Indian Union, resulting in mortality of 5,866 head of cattle. The disease is enzootic in Mysore, Madras, and Assam. In other provinces and states, only stray outbreaks are recorded. Kashmir, Punjab,

TABLE 2—Average Cattle Mortality Recorded in the Indian Union (1940-41, 45-46)

Serial No.	States & provinces	Cattle population in lakhs	Mortality recorded from				Total recorded mortality	Total recorded mortality per lakh of cattle
			Rinderpest	H.S.**	B.Q†	Anthrax		
1.	Kashmir	28	503	763	12	15	1,293	46.2
2.	*Punjab	153	4,693	12,031	898	10	17,632	115.2
3.	United Provinces	376	10,678	6,531	686	261	18,156	48.3
4.	Bihar	142	6,436	2,743	662	363	10,203	71.8
5.	*Bengal	237	19,761	1,663	152	595	22,171	93.5
6.	Assam	58	6,276	888	163	497	7,824	134.9
7.	Bombay	69	14,930	4,786	3,449	762	23,927	345.0
8.	C. P. & Berar	137	8,739	3,305	1,409	441	14,294	104.3
9.	Orissa	50	1,625	456	75	22	2,178	43.5
10.	Madras	230	21,935	6,182	5,738	2,080	35,935	156.2
11.	Mysore	50	16,752	1,061	3,513	1,123	22,749	454.9

*Inclusive of West Punjab and East Bengal.

**Hemorrhagic septicemia.

†Black quarter.

and Orissa are almost free from this infection.

The average number of deaths in each outbreak varies between 1.1 to 15.1; mortality per 100,000 cattle, between 0.06 to 22.9; and the mortality per 100 square miles, between 0.07 to 3.8. During the past three years, Mysore, Madras, Assam, and Bombay have suffered most (fig. 4).

Annually, an average of 0.07 to 3.3 outbreaks of anthrax are attended by a veterinary assistant surgeon. Percentage of cattle protected against the disease is almost negligible. The annual recorded losses from the disease are about Rs. 300,000. Undoubtedly, the losses incurred from this disease in the Indian Union are much more.

Foot-and-Mouth Disease Campaign—No Predictions

End of the foot-and-mouth disease campaign is not yet in sight. The 7,000-man force of the joint Mexican-United States commission is doing everything practical to control and eradicate the disease, but official reports written in a reserved tone make it clear that nobody is willing to predict when the job may be completed.

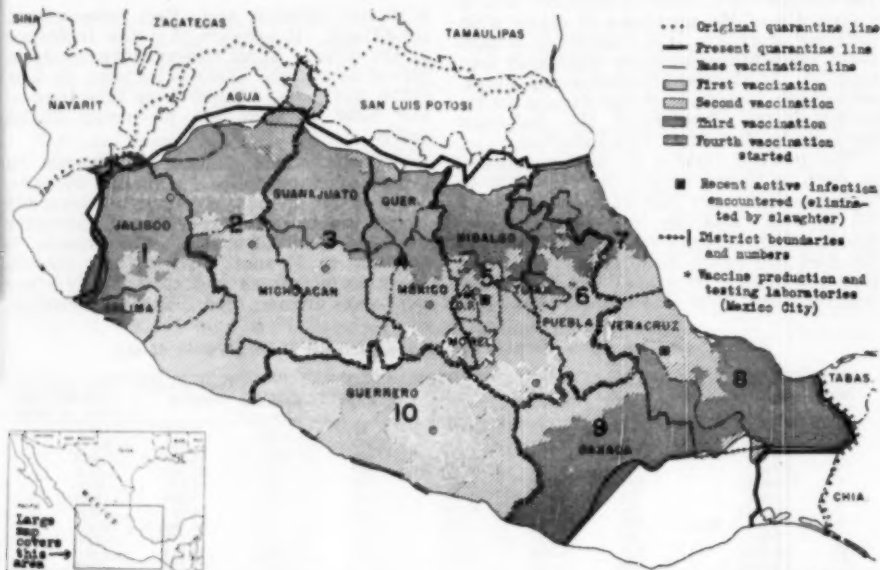
Whether mass immunization will turn

the tide also remains to be seen. Observers are, however, unanimous in their praise of the vaccine-production program and the record of nearly 50 million vaccinations to date.

Not only have the Mexican laboratories succeeded in meeting all demands for vaccine, but also they have built up a reserve of 10 million doses. Moreover, local manufacture of the vaccine has greatly reduced operating expenses. When vaccine was being imported, it cost the United States as much as \$1.00 a dose. Now, cost to this country for the entire operation is reported to average 39 to 45 cents per animal vaccinated. It is estimated that the total United States expenditure is about \$2 million a month.

Practitioners are the contact men for the official agencies in animal disease control work.—Roy Elrod, D.V.M., Indiana State Veterinarian.

More than 16,000 milk samples were submitted to the mastitis laboratory for routine testing. Of this number, 3,425 (21.39%) were positive. Of all the positive samples, 2,298 (67.08%) showed the presence of *Streptococcus agalactiae*.—W. R. LeGrow, D.V.M., Ph.D., Ontario.



—U. S. Department of Agriculture

The Foot-and-Mouth Disease Situation in Mexico, Nov. 10, 1949

Problems of the Milk Sanitation Program

J. A. WEBB, V.M.D., and H. L. RAGSDALE, D.V.M.

Philadelphia, Pennsylvania

MILK is our most nearly perfect food as well as one of the oldest known foods. Literature contains many references to milk. Records exist of cows being milked as early as 9,000 B.C. Sanskrit writings of 6,000 years ago describe milk as one of the essential foods. Hippocrates, the father of medicine, recommended milk as a medicine five centuries before Christ. The Bible contains many references to milk. In Exodus 3:8 and 3:17, references are made to the deliverance of the Israelites from Egypt into a "land flowing with milk and honey."

Cows were brought to America on Columbus' second voyage, and to the Jamestown Colony in 1611. The Pilgrims of the Plymouth Colony did not bring any on their first voyage, and lack of milk was said to have been a cause of the high mortality in children during that first severe winter in Massachusetts. Cows were required to be brought on later ships at the rate of one per family. This marked the beginning of our great American dairy industry. As our frontier moved west, cows accompanied the covered wagons of our early pioneers.

However, there are no early records of milk sanitation and the problems surrounding it. The greatest strides in this field have been made during the past fifty years.

The veterinarian has an important role in the program of milk sanitation, as well as in disease control. We can all point with pride to the eradication of tuberculosis in our dairy herds and other farm animals. Creditable work is being done in the control and treatment of mastitis of dairy cows. There is increased interest in brucellosis, and we are looking forward to its control and elimination from dairy herds. We have observed with much interest the ring test of milk and believe that it will become important in the brucellosis-control program.

Many markets require the physical examination of dairy herds by veterinarians, and this is an essential part of any quality milk program. Herds supplying grade A

milk are regularly examined twice annually. These examinations are made in accordance with standards outlined by the American Veterinary Medical Association.¹ In addition to the above, herds are examined when monthly microscopic examinations of milk films show evidence of mastitis. If there is difficulty in locating the trouble, samples of milk are collected from individual quarters, incubated, and films made and examined microscopically. Such examinations are effective and do much to improve a milk supply.

In addition to being free of pathogenic bacteria, milk of good quality must be obtained in a sanitary manner in clean utensils and promptly cooled. An important part of the milk sanitarian's job is the education of dairymen and milkers in the proper technique of milking. He must also advise the proper cleansing of equipment, and the company he represents should make available to the producer the best cleansing agents known. Approximately 90 per cent of all milking is done by machines, so the proper cleansing of these machines constitutes a real problem. We advise our producers to rinse each unit with 12 to 14 qt. of lukewarm water, using the suction method, followed by soaking ten to fifteen minutes in warm water containing a good cleanser or cleanser-sanitizer. Then, thoroughly brush all surfaces, rinse in water at 190 F., and invert on metal rack. All other equipment should be washed in a similar manner. We recommend dry storage of all milker parts. We have been using the quaternary ammonium compounds for two years and feel that they have a distinct place in sanitizing milk utensils. The dairy cleanser which we use, and which accommodates as much as 14.6 gr. of hardness per gallon of water, contains the following ingredients:

Soda ash	26.5%
Sodium metasilicate	26.4%
Sodium tetraphosphate	42.0%
Wetting agent	5.1%

The cleanser-sanitizer contains the following:

Alkyl dimethyl benzyl ammonium chloride	10.0%
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¹Presented before the Section on Public Health, Eighty-sixth Annual Meeting, American Veterinary Medical Association, Detroit, Mich., July 11-14, 1949.

From Abbott Dairies, Inc., Philadelphia.

²Report of the Committee on Abortion. J.A.V.M.A., 73, (1928):765-767.

Triton x 100 (wetting agent)	5.0%
Tetra sodium pyrophosphate	55.0%
Sodium metasilicate	30.0%

The rubber parts of milking machines were of poor quality during the war and some on the market today are not much better. All rubber becomes porous after use and acts as a lodging space for milk fat and solids and is ideal for the multiplication of bacteria. The long vacuum

TABLE 1—Result of Bacteria Count Back-flow Contamination

Bacteria s.p.c./Gen. of cotton in container	Bacteria s.p.c./ml. of milk in pail
9,000	5,000
7,000	1,400
310,000	8,900
200,000	1,100
150,000	1,400
210,000	1,500
120,000	650
370,000	1,600
81,000	4,300
2,000,000	1,400
8,000,000	5,800
22,000,000	4,400
280,000	2,500
270,000	2,200
8,000,000	7,400

s.p.c.—standard plate count.

line from the milker pail to the stanchion cock should be thoroughly inspected by every sanitarian, since milk does get into this line and "back-flow" of accumulated milk returns to the pail. The back suction of liquid from the vacuum line into the milker pail may occur in a number of ways. Frequently, this happens when two milker units are attached to the same line. The sudden change in vacuum in the line, as a result of the connection of the second unit, may change the relative pressure in the system in such a manner that the flow is not toward the vacuum pump, but toward the first milker pail which also acts as a vacuum reservoir. By the use of transparent tubing, this action may be easily demonstrated. Liquid may also get into the vacuum line as a result of overflowing of the milker pail or tilting the pail during milking and also from leaks through the teat inflation tube into the metal shell surrounding it. Manufacturers are working on units which may be attached to the head of the milker pail to prevent this back-flow which usually is highly contaminated. The following is a record of some recent work done at Pennsylvania State College by Dr. A. N. Perry along this line. This work was done on two dairy farms operating under average conditions and using two makes of milking machines.

Dr. Perry designed two cylindrical, screw-cap, metal containers and attached

them below the air line suction valve. Sterile cotton was placed between the inner and outer containers. Containers were perforated so that they did not restrict vacuum and also acted as a trap to catch milk contaminated by the back-flow. The result is shown in table 1.

The teat inflation tubes are a source of high bacterial counts, as they often become spongy after use and milk accumulates in the tiny openings. In our laboratory, bacteria counts have been made using the following technique: 100 ml. of sterile water is poured into each inflation—the tube is massaged from the outside for approximately one-half minute and then 1 ml. of the liquid is withdrawn in sterile pipette and introduced into the Petri dish containing the agar medium. Table 2 shows a typical result.

From work done, it appears that counts under 1,000/1 ml. show satisfactory rubber and effective cleansing.

Since the quality of rubber has not been satisfactory, we have made plastic tubing available to our producers. This tubing is transparent and nonporous and has been more satisfactory than rubber.

Since the proper care and maintenance of the milking machine causes a diminution of thermophilic bacteria in the milk supply, our sanitary inspectors stress these points at every visit. Samples of each producer's milk are taken at regular intervals (monthly) and laboratory pasteurized. Producers and company inspectors are notified of the results. Counts in excess of 5,000/1 ml. justify a farm visit, although many markets have set 30,000/1 ml. as permissible.

TABLE 2—Result of Typical Bacteria Count

Sample No.	Bacteria count per ml.
1	8,900
2	38,200
3	30,400
4	3,700
5	800
6	200
7	1,200
8	3,800

Prompt, efficient cooling of milk is important. During the war, production per farm was increased and many coolers were overloaded. It is now possible to get replacements. We advise coolers of adequate capacity to cool the greatest amount of milk produced any day of the flush months, and that they be equipped with mechanical agitators and maintain water levels above the level of milk in the can to be cooled. Practically all of the coolers in the Philadelphia milkshed are the immersion type,

although there are a few spray type coolers being used. The latter type is being watched with interest. Temperature of the water should be maintained between 34 and 40 F.

The lack of sufficient water of high temperature in the milk house is also a problem. Many heaters are too small and of the "pour-in" type, i.e., water must be poured into the heater to get warm water to flow out. Few of these heaters deliver water exceeding 135 F. and after pouring in a few pails of cold water, the temperature becomes much less and is ineffective. Since many dairymen are using warm water on cows' udders in preparation for the managed-milker program, the water remaining in the heater for use in the "clean-up" of dairy equipment is too cool to be effective. Pails used for pouring water into the heater are often not clean and so contaminate the water. Large storage heaters attached to a water line are much more efficient.

Deck inspection of all cans of milk in the receiving room preceding receipt is an important part of the milk sanitation program. At this time, milk is inspected for visible dirt and "off" odors. Samples are taken of rejected milk and sent to the laboratory.

Sediment and temperature tests are also made on the deck. Tests for sediment are made with a tester drawing 1 pint of the milk from the bottom of the can. Farm visits should be made as soon as possible after milk is rejected at the plant, so that correction may be made before the next milking.

We often remind dairymen that quality milk cannot be made by mixing inferior milk with good milk any more than it is possible to make a good omelet by using one spoiled egg with a dozen good ones.

The milk company sanitarian must also have a thorough knowledge of the regulations of the boards of health under whose supervision the milk is produced. This means he should be informed on such items as milk house construction and remodeling of dairy barns. Some time ago our company published a booklet on "How to Build a Good Milk House." This has been well received and has resulted in more houses of a standard type. This booklet is also available to carpenters and contractors engaged in building on dairy farms. Many dairy barns are being remodeled and the following publications are of great value to milk sanitarians:

Remodeling Barns for Better Dairy Stables.
A. M. Goodman, Cornell Extension Bulletin
No. 742, September, 1948.

Planning the Dairy Barn. Educational Service Bulletin No. 5, published by the Barn Equipment Association, 43d floor, Board of Trade Building, Chicago, Ill.

There is a great need for uniformity of dairy farm and plant inspection between state, municipal, and federal authorities. However, progress is being made along this line. Milk which is considered safe in one state should also be considered safe in the adjoining states. Unfortunately, inspection laws are often used to protect local markets and dairymen, thus acting as trade barriers. During the war, some states were willing to approve and receive outside supplies, and now there is evidence in those same states of obstructing or restricting the flow of milk across state lines. In the July, 1949, issue of the *Reader's Digest* ("Why Aren't We Drinking the Milk We Need"), there is a statement to the effect that, in a single plant receiving milk from 350 farmers, 26 inspectors were required to keep the permits in order—no inspector would approve inspection by the others.

Originally, milk inspection was inaugurated by the state and federal governments to protect the public from milk-borne diseases. Protection has been adequate since milk-borne diseases are now almost nonexistent in those communities where an effective inspection service functions.

SUMMARY

Milk sanitation has developed in this country as a result of slow evolution and the improvement must continue. Milk sanitarians must keep themselves informed, be aggressive, and diplomatic. The information must be taken by them to the dairymen and given in such form that they cannot get away from it. Like a hypodermic, you've got to get it under their skin. When they realize the benefit, you will get their support of your program.

Cooperation between veterinarians, sanitarians, dairymen, plant operators, and health officers is vitally necessary in handling the problems of the milk sanitation program and improving the quality of our milk supplies.

The sanitation division of the Du Page County Health Department cooperates with the medical administration and with county and municipal law enforcement agencies in visiting, quarantining, and inspecting premises where animals are maintained that have a bearing on potential hazards to health in man. Specifically, dogs suspected of having rabies or that have bitten human beings are so controlled.—E. L. Sederlin, M.D., Illinois.

A Survey of the Regulatory Control of Poultry Diseases in the United States

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THIS PAPER presents information about the regulatory control of poultry diseases in the United States. Some earlier remarks concerning poultry disease control in Maryland may bear repeating.

Pullorum control is carried out under the National Poultry and Turkey Improvement Plans. Efforts have been made since the beginning of the work to enlist private veterinarians in the programs. It has been a consistent experience that veterinary cooperation is forthcoming as long as other practice does not interfere. The eventual outcome has been that the practitioner discontinued this testing work. In order to continue these necessary activities and to prevent the work being taken over by uncontrolled lay groups, the Live Stock Sanitary Service has adopted the policy of employing laymen when practicing veterinarians would not continue testing. Under these conditions, at least a definite control of the laymen's activities has been possible. . . . Sections of the law under which the Live Stock Sanitary Service operates require that all viruses and vaccines, capable of producing disease in farm animals and poultry, be injected only by veterinarians on permit from the Service; and that all such injections be reported. . . . If the provisions of this law were fully imposed, the poultry industry of the state would be in a serious situation, because no poultryman or layman could inject fowlpox, laryngotracheitis, Newcastle, or other vaccine; and if he were forced to wait for veterinary service, he would suffer untold losses from disease. Obviously, the Live Stock Sanitary Service cannot enforce the law under these circumstances.

In order to secure appropriate information from all states concerning poultry disease control, a questionnaire was sent to all chief livestock sanitary officials. Responses were received from 47 states, so that a reliable survey is possible.

RESULTS OF SURVEY

In 32 states, laws or regulations cover the importation of poultry. In 20 states, these laws and regulations are general in nature; in 9, only specific diseases are

named; and in 7 others, diseases in general and specific diseases are referred to. Among the specific conditions, pullorum, Newcastle, tuberculosis, and fowl cholera are most frequently named. In only 1 of the states having interstate shipment regulations were these administered entirely by a layman; although in 5 others, the administration was recorded as operating jointly under veterinary and lay personnel.

Regulations exist in 38 states for the control of poultry diseases within the state. In most cases, the regulations are classified as general in nature; but there are also specific regulations covering pullorum, tuberculosis, Newcastle disease, bronchitis, and laryngotracheitis.

In 20 states, control programs within the state are administered by a veterinarian, whereas in 6, these disease programs are administered by a layman. In the remaining 12 states, they are administered jointly by veterinarians and laymen.

Only 2 states report that blood testing for pullorum is done entirely by veterinarians. One of these is operating under the National Poultry Improvement Plan on an extensive scale, and the other is not under the Plan and is not testing on an extensive scale. In 19 states, the pullorum testing program is being conducted through the use of both veterinarians and laymen. In 25, laymen alone are used in the pullorum testing program. One failed to answer this question. Twenty-seven reports indicated that, where laymen are used in pullorum testing, there is veterinary supervision.

Eleven states reported regulations covering poultry remedies. In most instances these are enforced by the food and drug division or a similar state agency. In 34 reports, it was indicated that regulations are in effect covering vaccines, and in 27 of these, the regulations are administered by a veterinarian. In 4, administration is the joint responsibility of a veterinarian and a layman. In only 3 states are the regulations administered solely by a layman.

Nine states reported that live virus vaccines are administered only by veterinarians, whereas 7 indicated veterinary supervision or special permits. Regulations covering the use of vaccines are rigidly enforced in 8 states, and in 5 of these, the

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Director Maryland Live Stock Sanitary Service, College Park.

regulations are administered by a veterinarian.

The answers to the final question, which called for the percentage of vaccination being done by veterinarians, ranged all the way from a definite "none," through "practically none," "0.001 per cent," "estimated 40 per cent," "75 per cent," to a single report of "100 per cent." These answers are assumed to refer to all types of vaccination, since the replies did not in all instances coincide with those referring to live virus vaccines.

The information gained from the questionnaire clearly indicates that there is no lack of laws and regulations, and that the administration of these is mainly in the hands of veterinarians. There is a definite indication that there is lack of enforcement of the laws and regulations concerning the use of vaccines. In phases of the work pertaining to actual contact with poultry flocks, such as pullorum testing and the use of vaccines, the reports show that an overwhelming amount is done by laymen and not by veterinarians.

Regulatory officials are criticized by practicing veterinarians for having allowed poultry practice to get out of the hands of the profession. Practicing veterinarians are criticized for having failed to enter actively the field of poultry practice. Poultrymen are criticized for failing to make poultry practice sufficiently lucrative for the practicing veterinarian. Veterinary schools have come in for a share of criticism for not stressing poultry disease studies in the curriculum. Remedial measures will be slow in development, but the interests of all will best be served when the veterinarians in practice take their rightful place in poultry disease control.

Livestock Vital Statistics

An attempt to stimulate reporting of morbidity and mortality of farm animals is being made by L. R. Davenport, D.V.M., of the Illinois Department of Public Health. Each month he sends out to all veterinarians in his state a tabulated list of the diseases reported for the preceding month, after having supplied each with cards for reporting these diseases.

This is certainly a step in the right direction, and how long a step it will prove to be depends upon how actively the practicing veterinarians cooperate in making the complete numbers known. This is a step which has long been recognized as a necessary one in the program of rendering a complete and efficient veterinary service. It has been retarded by previous failures

of practitioners to report to state and national disease control and regulatory officials on blanks of equally convenient form. A notable exception is the group of veterinarians who practice in eastern Iowa. These men have long practiced a reporting system of this nature, and they themselves derive the greatest benefit from it.

We can only hope that the time may be ripe for a similar project in Illinois, and that the movement may spread widely and quickly.

Practitioners and Disease Eradication

After discussing the need for, and the advisability of, using lay technicians in the programs for eradication of brucellosis and tuberculosis, the Eastern Illinois Veterinary Medical Association adopted the following resolution:

WHEREAS, brucellosis and tuberculosis in animals are recognized as serious disease menaces to the health of citizens of the state of Illinois, and are responsible for serious annual economic losses to Illinois livestock owners; and

WHEREAS, the application of effective control measures requires accurate knowledge of the diseases, their causes and modes of transmission; and

WHEREAS, in order to further continue the progress in reducing the incidence of brucellosis and tuberculosis in Illinois livestock, it is necessary to support the present disease control programs, but at the same time to keep increasingly in view the needs and objectives of a more intensive application of these programs, to that end be it

RESOLVED, That the Eastern Illinois Veterinary Medical Association reaffirm its belief in the following principle, that the prevention and control of brucellosis and tuberculosis can be best accomplished by veterinarians working directly with Illinois livestock owners and, further, that members of the Eastern Illinois Veterinary Medical Association support and actively cooperate with the state and federal agencies in their efforts to administer and carry out brucellosis and tuberculosis control programs designed to eradicate these diseases.

[This resolution is another in the series which recognizes the threat to the livestock industry from a partial disease control program and the responsibility of the veterinarians in general, and practitioners in particular, in formulating and actively supporting brucellosis control programs which use the services of veterinarians to the greatest extent and to the best advantage.]—Ed.

Prices permitting, dehydrated sweet potatoes gradually will find greater usage in the concentrate ration for dairy cows throughout the nation.—*Hoard's Dairyman*.

Cattle Mange in New York State

DONALD W. BAKER, D.V.M., Ph.D., and IVAN G. HOWE, D.V.M.

Ithaca and Albany, New York

MORE THAN \$75,000 was paid to custom sprayers by dairy farmers in 45 counties of New York last winter in the campaign to control cattle mange and scabies. This information is provided in a statistical report prepared by Dr. L. R. Barnes, veterinarian-in-charge for the U.S. Bureau of Animal Industry in New York. This report also reveals that more than \$10,000 was appropriated and spent by the boards of supervisors in 20 counties to encourage and subsidize the mange-control projects. These data are fragmentary and serve merely as an indication of the magnitude of the problem. We have information from farmers and veterinarians about hundreds of other infected herds in counties which had no official control programs and made no statistical reports. It seems probable that more than \$150,000 was spent this past winter by farmers and disease-control agencies in the study, diagnosis, and treatment of parasitic dermatitis in New York.

Mange has been an expensive and irritating health hazard to the dairy cattle industry in New York for many years. It existed as a perennial winter headache to the dairy farmers, but no organized effort was made to combat it until 1946.

At a conference held at the New York State Veterinary College in January, 1946, and attended by representatives of the state and federal bureaus of animal industry, the New York State Veterinary Medical Society, the Farm Bureau Federation, the agricultural extension agencies in the state, and some members of the veterinary college faculty, it was agreed that cattle mange is one of the most important animal health hazards in this state. An educational and control program was outlined, in which the official disease-control agencies and the veterinary college were to participate. Each succeeding year has seen this control project extended, culminating in last winter's effort. Valuable aid and encouragement has been given to the program by a generous grant from the Swift Research Foundation for a comprehensive

study of the epizootiology, pathology, and control of the condition in the northeastern region. Presently, in addition to the staff members of the parasitology laboratory at the New York State Veterinary College, one graduate student is completing his work for a Ph.D. degree on the study of the demodectic mange mite, and another is engaged in a comprehensive investigation of the pathogenicity and pathology of sarcoptic mange.

An extensive survey, made in the spring of 1948 by a group of state and federal veterinarians, showed that mange existed in practically all counties where dairying is an important economic enterprise. The incidence was higher in the counties commonly designated as the New York City milkshed. The herds in these counties often number from 50 to 100 milking cows, and the animals are usually confined in stables throughout the winter months.

The pathogenicity of the various dermatitis-producing mites has been studied for four years, but we are still unable to explain why the disease should exist in a mild form in one herd and become pathogenic in another. Systems of management and sanitation, feeding practices, and even variations in weather conditions do not offer any logical explanation for this phenomenon of an almost subclinical infection developing into a serious and debilitating disease.

From the time when this investigation was started, we have been forced to consider the cases of contact bovine mange which affects some individuals who care for infected animals. No statistical information is available, but veterinarians engaged in the control and survey work estimate that several hundred persons are affected each winter. Sometimes these infections have become very serious, particularly in children, and the lesions occurring on the face often require hospitalization.

The several reports which have been made during the past four years suggest that mange contributes to the cause of some cases of mastitis, particularly those which result from traumatizations of the udder. Traumatic injury to other parts of the body, particularly the rump and shoulder, frequently develop into abscesses which sometimes produce systemic effects. Each year, there have been several cases reported, particularly by county veterinar-

From New York State Veterinary College, Ithaca (Baker); and the New York State Bureau of Animal Industry, Albany (Howe).

Presented before the Section on General Practice, Eighty-sixth Annual Meeting, American Veterinary Medical Association, Detroit, Mich., July 11-14, 1949.

ians, of herds in which the debility has progressed to a stage where the animals are in a pitiful condition, and some of these outbreaks have been brought to the attention of the S.P.C.A. Probably the most serious economic effect of the wide-spread mange infection has been the loss in milk production occasioned by the development, in dairy herds, of uncontrolled outbreaks of mange which do not respond to treatment; and particularly those in which the owner has had no previous experience with the disease. This loss is only fully appreciated after an effective treatment has been applied and the increase in milk production noted.

DIFFERENTIAL DIAGNOSIS

Differential diagnosis is very important. In order to treat any of the specific parasitic infections effectively, it is necessary to know which species of parasite is the cause of the disease. Much of the money provided as county subsidies for mange control has been used for the specific identification of the causative organism. In addition to the parasitological laboratory maintained at the New York State Veterinary College in Ithaca, three other branch diagnostic laboratories have made their facilities available to veterinarians for the control project. During 1948, the laboratory at Ithaca alone examined 1,112 specimens of skin scrapings.

Four years ago, the authors believed that they had achieved a fair competence in making clinical differential diagnoses of well-developed cases of sarcoptic mange, chorioptic scabies, demodectic mange, lousiness, stephano-filariasis, and ringworm. The appearance of several outbreaks of hyperkeratosis, or x disease, has complicated the problem. Now we are reluctant even to express an opinion about the identity of a case of dermatitis without the benefit of a laboratory examination and demonstration of the parasite involved. In several herds, cases of persistent pruritus and of scabiness of the skin have occurred, in which no etiologic agent could be demonstrated. Sometimes this condition involves one animal, and sometimes a large portion of the herd. In such cases, we suspect an allergy. All of the active participants in the mange-control program are agreed that a differential diagnosis is not only important but necessary in the effective control of an outbreak.

THE CONTROL PROGRAM

A large part of our research program so far has been concerned with testing the practicability of various techniques and

chemical agents which have been suggested as possible treatments for mange. During the past winter, several of the new halogenated hydrocarbons have been carefully tested for toxicity. At the beginning of the campaign, a circular letter to all veterinarians requested that any suspected cases of toxicity be reported immediately to the New York State Veterinary College. Even though some very suggestive cases have been studied, we have been unable to demonstrate any cases of benzene hexachloride poisoning. Listeriosis has been the most common condition which simulates insecticide poisoning.

Many of the county agricultural agents have rendered valuable aid in organizing demonstration meetings and handling the details of county control programs. Circularizing this group recently, we learned that the mange-control program, during the winter of 1948-1949, was one of the most popular projects ever presented to the farmers.

The fact that many of the herds which were treated early in the winter, and which appeared to remain free of the disease during the first quarter of the following year but showed evidence of infection in the latter part of March and April, indicates that our present system of treatment will not eradicate the disease. There is practically unanimous agreement that the treatment was worthwhile, since it prevented the development of the usual mange outbreak in late winter and also protected the people handling the animals from contact infection. A large number of these farmers have already made contracts with the custom sprayers to treat their animals this fall. It is hoped that within another year or two it will be possible to provide the dairy cattle owners in New York with a system of control which will ultimately eradicate the disease.

Etiology of Grass Sickness Not Known

Dr. A. Brownlee, Agricultural Research Council Field Station, Berkshire, England, writes:

On page 442 of the December, 1949, issue of the JOURNAL, a correspondent describes work done at the Moredun Institute, Edinburgh, and states that the disease of horses known as grass sickness is caused by a virus which seems to be similar to the virus which causes poliomyelitis in man.

I wish to draw your attention to the fact that the etiology of grass sickness has not yet been determined, and that it is very misleading to state that it is caused by a virus.

SURGERY & OBSTETRICS

AND PROBLEMS OF BREEDING

A Comparison of Anesthetics Used in the Bovine Animal

S. J. ROBERTS, D.V.M.

Ithaca, New York

BENESCH of Vienna, in 1926, first demonstrated the value of epidural anesthesia in cattle. Since that time, epidural anesthesia, employing principally 1 and 2 per cent solutions of procaine, has been used extensively by most veterinarians in cattle practice. Until recent years, few new local anesthetic compounds were introduced.

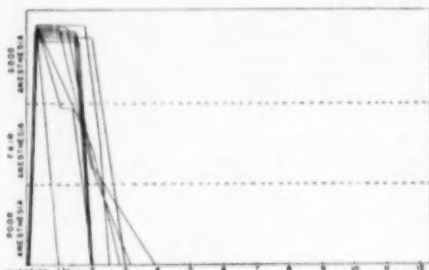


Fig. 1—Results of using procaine, 1 per cent, for epidural anesthesia in the cow. Dose = 12 to 18 cc. of solution, depending on weight.

Adrenalin or epinephrine hydrochloride, in a concentration of 1:30,000 to 1:100,000, was added to the procaine solutions used for local anesthesia, because it retarded the rate of absorption of the anesthetic and prolonged its effect. The value of adding adrenalin to procaine solutions used for epidural anesthesia in cattle was never satisfactorily determined. Some of the newer local anesthetics are tetracaine or pontocaine (Winthrop-Stearns, Inc.), metycaine, and hexylcaine or cyclaine (Sharp and Dohme, Inc.). Recently, various combinations of these drugs with procaine and epinephrine, or drugs with epinephrine-like action have been introduced. In order to evaluate several of these drugs and

compounds, particularly the duration of their effect when used epidurally in the cow, the following experiments were undertaken.

METHODS

Experimental cattle owned by the Department of Medicine and Obstetrics were used in this work. Most of the 38 dairy cattle used were adults of various breeds, with the exception of 2 young bulls and 2 yearling heifers. Few of the cows were in advanced pregnancy. When an animal was used more than once, at least two days were allowed to elapse between injections and, in most cases, intervals between in-

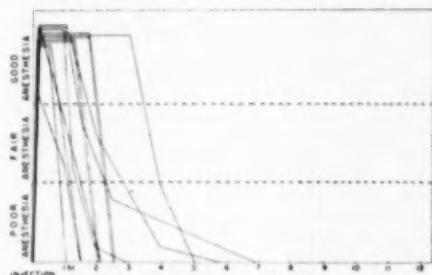


Fig. 2—Results of using procaine, 2 per cent, for epidural anesthesia in the cow. Dose = 7 to 15 cc. of solution, depending on weight.

jections were one week or longer. In so far as possible, when a cow was used more than once, different anesthetics were employed. An occasional cow would not develop as satisfactory an anesthesia as would other cattle when corresponding doses of the same drug were used.

The cattle were confined in stanchions or fastened in box stalls. A small area was shaved over the space between the last sacral and the first coccygeal vertebrae. After disinfection of this area with alcohol, suitable restraint of the cow was applied. Using a 1 $\frac{1}{4}$ -in., 16-gauge needle,

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one of the sterile anesthetic solutions was injected epidurally by means of a 10-cc. Record syringe. In all cases, the dose of anesthetic solution was based on the strength of the solution and the weight of the cow. This dose was calculated carefully in an attempt to bring about satisfactory anesthesia without causing the animal to stagger, become paralyzed in the

rear limbs and 1 went down. Good to fair anesthesia was maintained for one to four hours with an average for the 12 cases of one and nine-tenths hours.

Twelve cattle, weighing from 700 to 1,100 lb., were injected epidurally with 12 to 18 cc. of a solution composed of 1 per cent procaine and 1 to 2 per cent of 1:1,000 adrenalin or epinephrine solution. This resulted

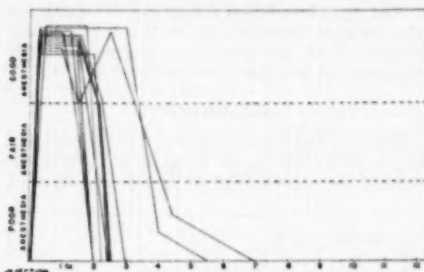


Fig. 3—Results of using procaine, 1 per cent, and adrenalin, 1 to 2 per cent of a 1:1,000 solution, for epidural anesthesia in the cow. Dose = 12 to 18 cc. of solution, depending on weight.

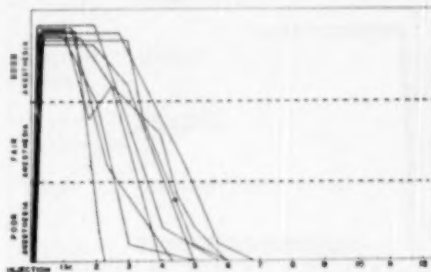


Fig. 4—Results of using procaine, 2 per cent, and adrenalin, 2 to 4 per cent of a 1:1,000 solution, for epidural anesthesia in the cow. Dose = 7 to 10 cc. of solution, depending on weight.

hind quarters, or go down. The degree of anesthesia was recorded at intervals by noting the degree of paralysis of the tail, the suspended defecation, and the sensory reaction to having the vulva pinched with rat tooth forceps. In the following results, "good anesthesia" indicates that the tail was paralyzed, defecation was suspended, and no sensory reaction to pinching the vulva was exhibited; "fair anesthesia" indicates that the tail was paralyzed, some defecation occurred, and slight to partial sensory reaction to pinching the vulva was exhibited; "poor anesthesia" indicates that the tail had slight to no paralysis, defecation was present, and definite to marked sensory reaction to pinching the vulva was exhibited.

RESULTS

Eleven cows, weighing 650 to 1,200 lb., were injected epidurally with 12 to 18 cc. of 1 per cent procaine solution (fig. 1). Good anesthesia was obtained in all cases; 3 became slightly unsteady on their rear limbs. Good to fair anesthesia was maintained for three quarters of an hour to two and one-half hours with an average for the 11 cases of one and nine-tenths hours.

Twelve cattle, weighing from 700 to 1,150 lb., were injected epidurally with 7 to 15 cc. of 2 per cent procaine solution (fig. 2). Good anesthesia was obtained in all cases; 2 became slightly unsteady on their

in a 1:50,000 to 1:100,000 adrenalin concentration (fig. 3). Good anesthesia was obtained in all cases; 1 became slightly unsteady on its rear limbs. Good to fair anesthesia was maintained from one and three-quarters to four and one-quarter hours with an average for the twelve cases of two and two-fifths hours.

Nine cattle, weighing 700 to 1,200 lb., were injected epidurally with 7 to 10 cc. of a solution composed of 2 per cent procaine and 2 to 4 per cent of 1:1,000 adrenalin solution. This resulted in a 1:25,000 to 1:50,000 adrenalin concentration (fig. 4). Good anesthesia was obtained in all cases; 2 became unsteady on their rear limbs, and 1 went down. Good to fair an-

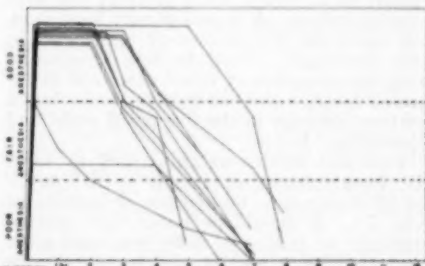


Fig. 5—Results of using cobefrin (Cook White Lab., Inc.) for epidural anesthesia in the cow. Dose = 5 to 10 cc. of solution, depending on weight.

esthesia was maintained for two to five hours with an average for the 9 cases of three and one-half hours.

Eleven cattle, weighing 500 to 1,100 lb., were injected epidurally with 5 to 10 cc. of novocain, pontocaine, and cobefrin (Cook Waite Lab., Inc.) (fig. 5). This is composed of 2 per cent novocain (procaine), 0.0015 per cent pontocaine, and cobefrin 1:10,000.

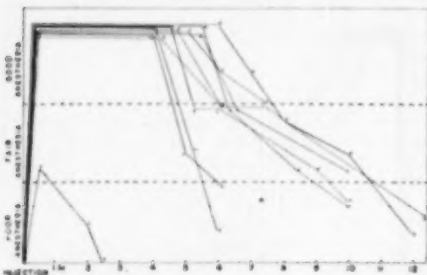


Fig. 6—Results of using hexylcaine (Sharp and Dohme) for epidural anesthesia in the cow. Dose: x = 5 cc. of a 5 per cent solution; o = 10 cc. of a 5 per cent solution.

The latter drug has an action similar to epinephrine. Good anesthesia was obtained in all but 2 cases; 1 cow became slightly unsteady on its rear limbs. Good to fair anesthesia was maintained for four and one-half to seven and one-half hours with an average for the 11 cases of five and three-fifths hours.

Ten cattle, weighing 750 to 1,100 lb., were injected with 5 and 10 cc. of 5 per cent hexylcaine (fig. 6). It should be noted that earlier experiments with this drug in 0.25 to 1.0 per cent solutions gave unsatisfactory results. Of the 4 cows receiving 10 cc. of the 5 per cent solution, 3 became unsteady on their rear limbs; while only 1 of the 6 cows receiving 5 cc. became unsteady. Good anesthesia was obtained in all but 1 case. It was felt that poor technique of injection may have been the cause for the failure of anesthesia in this lone case. Good to fair anesthesia, with the exception of this 1 case, was maintained for five and one-half to twelve hours with an average in the 9 cases of eight and four-fifths hours.

Fourteen cattle, weighing 500 to 1,000 lb., were injected epidurally with 3 to 10 cc. of 1 per cent pontocaine or tetracaine (fig. 7). It should be noted that concentrations of 0.25 and 0.50 per cent gave poor anesthetic results, and concentrations of 2.0 to 4.0 per cent resulted in severe and prolonged paralysis. Good anesthesia was obtained in 8, and fair anesthesia in 3, of

the 14 cases receiving the 1 per cent pontocaine solution. It is difficult to explain why the remaining 3 failed to obtain fair anesthesia. Possibly, in 2 of these cases, the volume of the drug injected was too small. Six of the 14 cows became unsteady on their rear limbs. Good to fair anesthesia in 11 of the 14 cattle was maintained for two to nine hours with an average for the 11 cases of four and three-fifths hours.

The results of this study on the duration of epidural anesthesia in the cow, using various local anesthetics, is summarized for purposes of comparison in figure 8.

DISCUSSION

Wright¹ has observed that when cows are given large doses of local anesthetics resulting in a paralysis of the rear limbs of

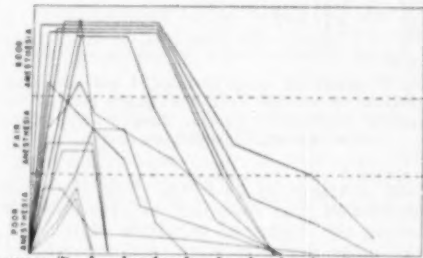


Fig. 7—Results of using pontocaine (Winthrop-Stearns, Inc.), 1 per cent, for epidural anesthesia in the cow. Dose = 3 to 10 cc. of solution, depending on weight.

the animal, the anesthesia and incoördination persist longer than where lesser doses of anesthetics are given. In these experiments, a definite attempt was made to keep the cow standing, yet obtain good anesthesia.

Cyclaine or hexylcaine and pontocaine or tetracaine are of particular interest because they have other useful characteristics. They are good local anesthetics in 1 to 2 per cent solutions in the eye. In 8 cows and 2 horses where they were used as anesthetics on the cornea, satisfactory anesthesia was obtained in one to four minutes and persisted for approximately one hour. No immediate or subsequent irritation of the eye from these drugs in these concentrations was observed. In 1 cow, cyclaine was used as a paravertebral nerve block, 10 cc. of a 5 per cent solution being placed over each nerve. Good anesthesia of the flank was maintained for three hours.

In the ambulatory clinic, we have used the novocain, pontocaine, and cobefrin solu-

tion in certain cases for the past two years with good success. We have used cyclaine in the field on a number of cases in recent months with success. In all the cases cited in the experiment and in our work in the field, we have observed no untoward reactions or sequelae with any of these products except pontocaine.

In 2 cows given 6 cc. of 4 per cent, and 1 cow receiving 10 cc. of 2 per cent pontocaine, each became unsteady and went down about one hour after injection. One cow got up in seven hours, and 1 in twelve hours. The third was down for sixty hours and was finally assisted to her feet by slings. All 3 cases remained unsteady for two to five days, 1 being unable to stand or get up without slings during that time. This latter cow finally had to be slaughtered. At the end of ten days, the paralysis was still noticeable by a limp tail in all 3 cases. Even with the 1 per cent solutions of pontocaine, it seemed that the effects of this drug on the motor nerves were more pronounced than the effect on the sensory nerves. While the tail would still be paralyzed, and the cow might even be unsteady, sensory stimuli would elicit some response. The other local anesthetic agents were more reliable, effective, and safe than pontocaine for epidural anesthesia.

In discussing epidural anesthesia, it should be mentioned that this operation is a nerve block, as the spinal cord and membranes only extend posteriorly in the spinal canal of the cow to about the mid-sacral vertebrae.^{2,3} The nerves present in the vertebral canal at the site of the injection are extradural or epidural and, thus, there is no danger of respiratory paralysis due to the anesthetic travelling forward in the spinal fluid. The only dangers described are those of infection^{2,3} and severe paralysis such as in the above described case when an overdose of pontocaine was administered.

Benesch is quoted by Wright⁴ as saying that epidural anesthesia does not interfere with normal involution of the uterus. Wright⁴ amplified this by stating that if epidural anesthesia is low or posterior, that is, the motor nerves to the limbs are unaffected, the sympathetic nerve fibers to the uterus and uterine contractions are uninfluenced. But if anesthesia is anterior or high and motor nerves to the rear limbs are affected, then sympathetic nerves to the uterus may become paralyzed. However, as Wright states further, the control of uterine contractions at parturition is complex and probably mainly under the influence of pitocin, a hormone from the posterior pituitary. Normal parturition can occur after division of the spinal cord in the mid-thoracic region or after section of the sympathetic nerves supplying the uterus.

These newer local anesthetics, which are used epidurally to prolong anesthesia, may be used to advantage in treatment of certain cases of prolapse of the uterus and vagina, long difficult dystocia, operations

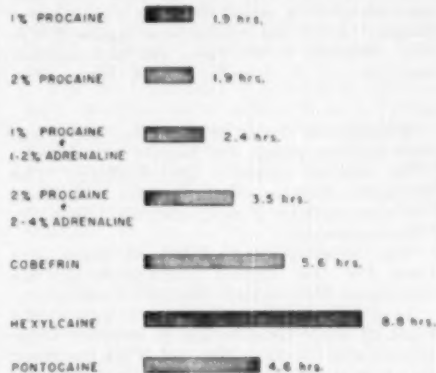


Fig. 8—A comparison of the average length of the good to fair anesthetic periods of the various drugs and combinations.

on the perineum such as prolapse of the rectum and bladder, and tenesmus due to a severe vulvitis or vaginitis.

SUMMARY

1) One per cent procaine; 2 per cent procaine; 1 per cent procaine and 1 to 2 per cent of 1:1,000 adrenalin; 2 per cent procaine and 2 to 4 per cent of 1:1,000 adrenalin; tetracaine (pontocaine); novocain, pontocaine, and cobefrin solution; and hexylcaine (cyclaine) were compared as to the duration of effective epidural anesthesia in the cow.

2) The duration of good to fair anesthesia produced by these drugs increased in the order given with the latter two products showing prolonged anesthetic effects as compared with the other drugs or combinations.

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Panel Discussion on Fracture Fixation

At the Eighty-Sixth Annual Meeting of the American Veterinary Medical Association, Detroit, Mich., July 11-14, 1949, the Section on Small Animals presented a panel discussion on "Fracture Fixation" which was telecast over station WWJ-TV. Members of the panel and their subjects were Drs. G. B. Schnelle, Boston, Mass., "The

Place of the X-Ray in Fracture Treatment"; L. R. Phillips, Denver, Colo., "Kirschner-Ehmer Splint Applications"; Otto Stader, Ardmore, Pa., "The Stader Splint"; and W. O. Brinker, East Lansing, Mich., "The Use of Intramedullary Pins in Small Animal Fractures." Mr. John Merrifield, farm editor of WWJ, was moderator of the discussion.

MODERATOR MERRIFIELD: On our fracture-fixation panel, Dr. Stader will discuss "The Stader Splint"; Dr. Phillips, "The Kirschner-Ehmer Splint"; Dr. Brinker, "Intramedullary Pins"; and Dr. Schnelle, "Roentgenology."

The veterinarians, 2,200 of them, are here for the annual convention of the American Veterinary Medical Association.

Like all professional people, they spend most of their time trying to improve techniques and trying to find out what the other fellow is doing better. That is not a selfish reason. The veterinary profession is dedicated to the proposition of safeguarding human health through the continued health-giving activities for livestock.

Maybe I have not made myself plain. They treat livestock diseases not only to cure livestock but also to protect your health, my health, and everybody's health.

In a few moments, I will introduce an interesting program—interesting because it is a cross-section of what goes on at the American Veterinary Medical Association convention.

Right now, I want to introduce the people who are here at the table with me.

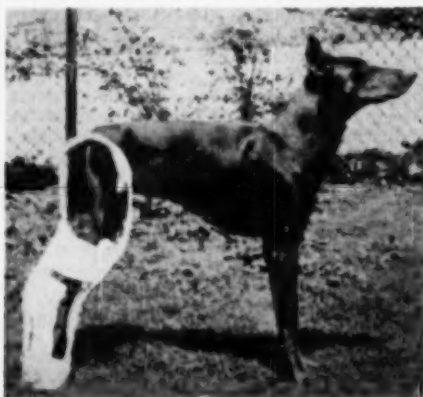


Fig. 1—A Doberman Pinscher wearing the Schroeder-Thomas splint.

There is Dr. G. B. Schnelle of the Angell Memorial Animal Hospital in Boston, Mass.

The gentleman sitting next to Dr. Schnelle is Dr. W. O. Brinker, professor in the small animal section of the School of Veterinary Medicine at Michigan State College, East Lansing.

Sitting at my right, is Dr. Stephen Elko, a practitioner in Detroit. He is the fellow to whom you and I take our pets to be treated for their ills and to be repaired of their hurts.

On my other side is Dr. Otto Stader of Philadelphia. Dr. Stader is the inventor of the Stader splint. It is quite an improvement over the old wood splints that grandpa and grandma used to put on us when we hurt ourselves.

Beside him is Dr. L. R. Phillips, a practitioner from Denver, Colo.

And here is Stanley Aiston, a member of the Detroit police department; and the dog is Asta. Asta has consented, with Stanley's approval, of course, to act as our model during this cross-sectional picture of what goes on at the American Veterinary Medical Convention.

I want to call on Dr. Elko, who is chairman of the Small Animal Section of the convention, to take over and conduct a symposium of, well, let's just call them a group of dog doctors (laughter) who are trying to improve their own technique.

Dr. Elko, may I suggest that Asta belongs to me? See there, copper, I've copped your dog already! Let's assume that she belongs to me and has been struck by an automobile. What would you advise for first aid in a case like that?

DR. S. R. ELKO: In Boston, I would call on Dr. Schnelle at the Angell Memorial Animal Hospital. I will call on Dr. Schnelle to take over.

DR. G. B. SCHNELLE: Of course, this dog is disgustingly healthy, from a veterinary standpoint, but we will assume she is an injured animal brought to our hospital.

The first step is to examine her thoroughly for internal injuries. Even though it was quite apparent that the dog had a fracture and was brought to us with one leg

dangling, perhaps even cut, she should be examined for internal injuries which might prevent us from proceeding with radiography or with fracture treatment.

I would look at the membranes of her eyes for evidence of shock and of internal hemorrhage. The membranes of her mouth might tell a little bit more. If they are blanched and white, it would be an indication that she had suffered from shock and perhaps from hemorrhage.

If so, in advance of doing any fracture treatment, even temporary treatment, she might need a blood transfusion. She might also need saline and dextrose solution.

I would look elsewhere for other injuries, feel her abdomen for signs of soreness and go over her chest for soreness and perhaps for fractured ribs, before attempting to treat the obvious fracture.

If brought to a veterinarian with one leg dangling and hanging, we have methods of diagnosing fracture which include feeling the part and observing its distortion and feeling the crepitus, that is the grating of bone. Those are things that I would look for now.

Before attempting to treat a fracture, it should be x-rayed. With a quiet and tractable dog like this, anesthesia or narcotics would not be necessary, but a badly hurt or intractable dog may require an opiate like morphine or demerol, one of the morphine substitutes. Or, perhaps if conditions war-

ranted it and we knew a fracture had to be set, the patient would be given a complete anesthetic and placed on a table in a comfortable position. To do that, we use sandbags and cushions. We use a triangular, wedge-shape cushion to prop the dog's head and shoulder, getting the part we want into proper position for radiography. The part to be photographed is put down nearest the film.

For the treatment of some types of fracture, we have what is known as a Thomas splint, or sometimes a Schroeder-Thomas splint. I have that on a slide, which shows a Doberman that actually has a fracture (fig. 1). The Schroeder-Thomas splint will do for transporting a dog with a difficult fracture to the x-ray room, and a great many fractures can be set with this type of splint alone.

Early treatment of fractures is very important, especially those of the lower femoral epiphysis which are common in young dogs, before the ends of the bones have joined solidly.

This fracture, if set within eight or ten hours, can be reduced and treated very simply. The fractured end has been reduced by manual manipulation, and the leg has been flexed or folded. This serves to hold it in place without further splintage. Simplicity makes it possible for the local veterinarian to handle it easily. The importance, however, is the time element.

If this fracture had been left for twenty-



Fig. 2—Anterior-posterior view (left), and lateral view of original fracture.



Fig. 3—Anterior-posterior view (left), and lateral view of fracture (fig. 2) after insertion of pin.

four hours or more, then it would become a problem for more difficult operation requiring complex apparatus. I think Dr. Stader can tell you about that.

DR. OTTO STADER: Dr. Schnelle pointed out the importance of getting these cases early. This can not be over-emphasized. As time goes on, there is a great deal of muscle spasm which pulls the lower fragment upward and makes actual setting or reduction of the fracture extremely difficult.

Fractures close to the joints should be treated in such a way that the joint function is maintained throughout the healing period. For that, a special type of splint is used.

In fractures involving the shaft a little higher than the epiphyseal fracture, other methods can be used. There are many methods of fracture treatment, and each has its rightful place.

Dr. Brinker has done some very nice work on shaft fractures.

DR. W. O. BRINKER: The two most common types of intramedullary pins used at the present time are the Steinmann pin and the Kunstcher pin. In the use of intramedullary pins, we take advantage of the

cortical bone, the spongy bone at the proximal end, and the spongy bone at the distal end. In looking at a bone with the intramedullary pin inserted (fig. 5), the pin would enter at the upper part, extend all the way down to the distal end, and be well anchored in the spongy bone at the distal end. That is important to obtain better anchorage in the bone.

We like this type of fixation primarily in transverse fractures of bone; that is, those fractures which go straight across, and particularly in transverse fractures occurring near the end of the bone, proximal or distal.

For comminuted fractures, particularly those occurring near the center of the bone, we prefer other types of pin fixation.

The pins have been well tolerated by animals in which we have used them. This method does allow some movement of the leg during the healing process.

Figures 2 to 4 show a fracture in a 7-month-old Cocker Spaniel. The pin was left in position approximately three and one-half weeks. Sufficient healing had



Fig. 4—Anterior-posterior view (left), and lateral view of fracture (fig. 2) after removal of pin.



Fig. 5—Three views of a femur with the intramedullary pin inserted.

taken place at that time and it was removed.

Occasionally, animals other than cats and dogs, are presented with fractures. The owner of a platinum fox with a fracture of the tibia was quite interested in saving the fox and using it to raise young. Experience in handling foxes dictates use of some type of internal fixation, because foxes will,



Fig. 6—A German Shorthair Pointer. The left hind leg has been corrected with a Kirschner-Ehmer splint. The right hind leg is still deformed.

in a majority of cases, remove any external fixation, such as a cast or splint. The intramedullary pin was inserted, cut off at the proximal end of the bone, and left in place. The animal was using the leg in pretty good shape in about three days and was perfectly sound at one month after the pin was inserted. That was a year ago. This vixen has whelped a litter of foxes normally and the pin has not caused the least bit of trouble.

Fractures of the midshaft are best handled by some other type of fixation. Dr. Phillips will discuss that subject.

MODERATOR MERRIFIELD: Dr. Brinker, isn't the insertion of the splint in animals rather painful?

DR. BRINKER: When the pin is inserted, the animal is under a general anesthetic.

MODERATOR MERRIFIELD: That just goes to prove that I am a layman. There is no pain, then?

DR. BRINKER: There is no pain, and no pain following, other than what we would

normally expect following the fixation of a fracture.

MODERATOR MERRIFIELD: Thank you, and now Dr. Phillips.

DR. L. R. PHILLIPS: Occasionally, we have dogs presented that have developed crooked legs, such as all of you have seen on the streets at various times (fig. 6, 7). There are various reasons for this. In some cases, the owner has not recognized a fracture; in others, a splint may have been removed a little too soon.

Older dogs, of course, present problems in healing that we do not have in the younger animals. Also, the problem of nutrition enters into the healing of a fracture. Often, the leg will turn outward and, in order to correct this, we pin the bones by external fixation. The two pins are placed in the upper part, two in the lower part below the joint, and the leg is then drilled at the area where the deformity is present. Often, we can operate and remove a wedge of bone and then apply a splint to correct this deformity. A case, when first presented to



Fig. 7—Six months later, both hind legs of the German Shorthair Pointer are corrected.

us, may show a bend right at the knee joint, with the paw turned outward. Such a leg would be corrected by drilling just above the joint, applying the pins, and then correcting the alignment and putting fixation rods in place. The bone is deformed just above the joint.

Sometimes the hind leg, the tibial joint, shows extreme deformity.

MODERATOR MERRIFIELD: As a layman, may I make a few observations? I understand that, no matter what kind of a fracture it is, the veterinarians will find some way to correct or repair that fracture and that, as the fracture becomes more severe,

there are more complicated ways of taking care of it, all the way from the old bandage and wooden stave set around the member that is injured up to that thing (fig. 9) that Dr. Phillips just showed us. What do you call that, Dr. Phillips?



Fig. 8—The splint in position on a dog. Open reduction was necessary because the femoral head had been dislocated from its position in the acetabulum for three months. The splint was left on for ten days.

DR. PHILLIPS: The Kirschner-Ehmer splint.

MODERATOR MERRIFIELD: I have seen a lot of splints, and I do not know the names of all of them yet, but I do understand there is something to take care of any kind of a fracture. Who brought this one to the meeting? I would like to have it explained.

DR. OTTO STADER: I brought that along. It is one of my recent brainstorms, which has nothing to do with fractures but with dislocation of the hip, which is quite a serious problem. Some can be put back in place and stay there very well, but where there is considerable damage to the cartilage surrounding the joint, there is a tendency to flip out of place very easily.

With this contrivance, after the dislocation has been reduced, two pins are put in the ilium above and two pins at right angles in the ischium posterior, and one pin into the trochanter of the femur.

In most dislocations, there is terrific restriction of motion but this permits a dog's leg to move. After ten days, it can be taken off. That instrument will maintain dislocated hips while permitting movement of the joint.

MODERATOR MERRIFIELD: Thank you very much for confusing me still more.

One thing is clear, though. If there isn't some way to take care of a certain fracture, the veterinary medical profession will find it. A recent brainstorm takes care of this; another brainstorm will take care of something else.

Well, neighbors, ladies and gentlemen, you have an idea of what is going on at the convention of the American Veterinary Medical Association here in Detroit.

Our discussion this afternoon was just an example of the many types of discussions that are going on throughout this medical convention. Not only healing of fractures in small animals are considered, but sessions are held on subjects such as the tracing of scarce minerals, using radioactive minerals as a means of tracing the

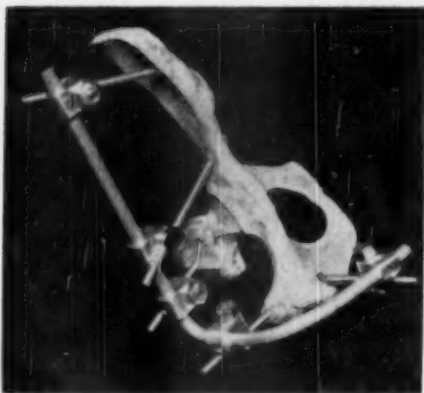


Fig. 9—The splint in position on skeleton and indicating placement of pins in the bones.

development of diseases in cattle, proper feed rations and proper vitamin rations, and surgery of all kinds; and, not the least, what the outside people think of the veterinary medical profession.

The veterinarians meeting here in Detroit are really going "all out" to find a better way to safeguard human health.

It has been a real privilege for your farm editor to sit in at some of their meetings. The veterinary medical profession deserves a great deal of support.

Thank you very much, gentlemen, for your time and trouble to let us sit in on your discussion. Good day!
(Applause.)

I have found 37½ to 50 mg. of stilbestrol given the third day and again a week later an effective method of blocking an undesirable conception, says Dr. R. E. Ruggles, Moline, Ill.

Granuloma of the lip—an indolent ulceration of the upper lip in cats—responds well to application of 1 per cent gentian violet.—*Vet. Rec.*, Oct. 15, 1949.

Stainless Steel as a Surgical Dressing

The difficulty in applying and retaining dressings on tails of dogs and monkeys is well known. The use of stainless steel cylindrical tubes, of an appropriate length, which fit snugly over the stub or tip of the tail is suggested as a remedy (*Vet. Rec.*, Nov. 26, 1949). They are made as light as possible for the strength required, and considerable strength is necessary. The ends are acutely flared at one or both ends and of a length in proper relation to the diameter. The sleeves are secured in position by a few turns of "Elastoplast" bandage carried forward on to the tail itself. Desirable features cited are: free ventilation of the lesion, protection to the wound or lesion from biting, durability, easy sterilization, and examination of wound while the dressing is in place.

Treatment of Bovine Trichomoniasis

A new and simple treatment for bulls infected with *Trichomonas foetus* was reported to the meeting of the United States Livestock Sanitary Association, Oct. 12-14, 1949 (*Schweiz. Arch. f. Tierheilk.*, 91, Aug., 1949:481), by Dr. Emil Hess, professor, Veterinary-Bacteriologic Institute, University of Zürich, Switzerland.

Briefly, it consists of injecting 10 liters of a freshly prepared, 3 per cent hydrogen peroxide solution, containing 1 to 1½ parts per thousand of a nonionic wetting agent, through a specially designed spray tube into the prepuce. The solution is warmed to 104 to 107 F., and sprayed under 150 lb. per square inch of pressure, using not less than six minutes for the treatment. The spray tube is of metal with a sheath of sponge, and is inserted as deeply as possible into the sheath while being continuously moved around the glans and the colum penis to insure maximum contact with

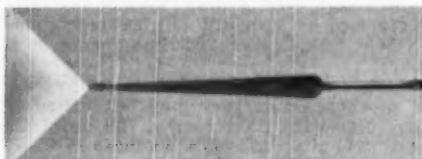


Fig. 1—Spray nozzle with sponge sheath.

every bit of the mucous membrane of the penis. At the same time, the prepuce is strongly but carefully massaged to give thorough penetration to the entire membranous surface.

The treatment is based upon cultural ob-

servations which showed that *T. foetus* grows most readily in the deeper strata of cultures in narrow tubes, and in an atmosphere of nitrogen. This led to trials showing that exposure to oxygen promptly killed actively multiplying cultures. It was then but a short step to experimental creation of an unfavorable atmosphere in the sheath by liberating the nascent oxygen from a solution of hydrogen peroxide.

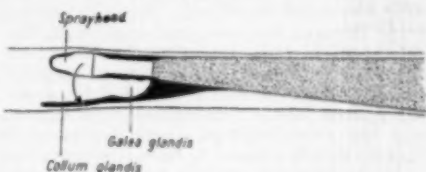


Fig. 2—Location of the tube in sheath at time of treatment.

Another practical observation was to the effect that trichomonads are more readily accessible when the bull has been excited to erection, because the turgid membrane forces cellular detritus, secretions, and trichomonads from the depths of the recesses in the folds of mucosa.

By March 1, 1950, 44 bulls had been treated with this method, and success always followed one or two treatments, even though some of the cases were chronic.—Dr. Emil Hess, Veterinary-Bacteriologic Institute, Zurich University, Switzerland.

Surgical Restoration of Tendon Function in the Horse

Because the results of tenotomy for the surgical correction of contracted tendons by the usual method have been unimpressive in several equine subjects, we considered applying the surgical techniques used by human orthopedic surgeons for tendon lengthening for application to the horse. Several forelegs were dissected for orientation and visualization of anatomic relations previous to surgery on the living subject. The metacarpal region immediately lateral to the deep and superficial flexor tendons was selected as being relatively avascular and, with the exception of the anastomatic nerve branch, containing no important structures which might be accidentally traumatized during surgery. Accessibility of the involved structures was better from the lateral approach. The surgical procedure and succeeding events are hereinafter described in detail.

The patient, a 9-year-old, 900-lb. mare, was the property of the Lihue Plantation

Company, Lihue, Kauai, T. H. This animal was affected with contracted deep and superficial flexor tendons of the left foreleg. At the time of operation, the condition had advanced to a point that only the toe could be placed on the ground. General anesthesia was induced by chloral hydrate intravenously injected; the affected limb was placed uppermost, and a meticulous preparation of the surgical field carried out. Sterile drapes were placed over the operative area and the surgeons suitably garbed. An incision was made through the skin and superficial fascia parallel with, and directly lateral to, the tendons from the uppermost palpable portion of the tendon to about 2 in. above the fetlock joint. Hemostasis was secured and the skin removed from the surgical field by towels clipped to the cut edges. The anastomotic nerve branch was not seen and was probably cut. The incision was carried through the deep fascia and tendon sheath, and the tendons were exposed. More pathologic changes were present than had been suspected from the clinical examination; the tendons were found to be firmly adherent to their sheath and to each other. The sheath was separated from the tendons over the entire length of the incision by blunt dissection. The foot was then forcibly extended until the remaining adhesions between the sheath and tendons were broken down. Adhesions between the tendons were handled in a like manner, at which time the superficial tendon accidentally split on its long axis the entire distance of the incision. The probable necessary lengthening to be obtained was calculated visually. To serve as landmarks, two straight needles, 3 in. apart, passed above and below a central bisecting line of the superficial tendon from the lateral to the medial side. The tendon was then cut down to the needle on one side and up to the needle on the other, then split between the two, forming a Z-shaped incision severing the tendon. The remaining adhesions between the tendons were then broken down by forcible extension of the foot. A similar tenotomy was performed on the deep tendon. The foot was then extended to the normal weight-bearing position and the tendon edges stabilized by clipping together with Allis forceps. Deknatel silk sutures (No. 1) were placed at close intervals along the borders of the tendon and two through-and-through mattress sutures placed along the flat surface. A similar repair was made upon the superficial tendon, and the accidental split joined by a few side-to-side mattress sutures. The tendon sheath was closed with a running stitch using the same material; likewise the fascia and skin. A dry sterile gauze pack was placed over the incision, the

leg wrapped in cotton, and an Ace bandage applied over the whole. Operating time was approximately one hour.

Upon recovery from the anesthetic, the mare rose to her feet and walked, without difficulty, 300 ft. to a box stall.

The operative wound was examined the following day and found dry and with minimal local swelling. The leg was dressed as before and the mare walked 100 yards. Action was normal except for a slight limp. The following day, the toe was found pointed and the animal reluctant to use the leg. Novocaine blocks of the median, ulnar, and musculocutaneous nerves were made and the mare walked 100 yards. This was accomplished in a normal manner, the pain apparently abolished. The following day, the same symptoms were manifest, and intracaine blocks performed as before. Comfort soon became apparent and the mare walked 200 yards in a normal manner. The wound was observed and dressed as before, daily. Healing was by primary intention over the entire incision, except for a space of about 1 in. a little above the lower commissure of the wound. On the eighth day postoperatively, a little of the silk suture from the fascia appeared in the wound and was withdrawn in its entirety, after which the opening promptly closed. No further evidence of discomfort was seen and the mare exercised in increasing distances daily, locomotion and weight bearing seemingly normal. After about thirty days, it became apparent that contraction of the tendons was again taking place. Intracaine blocks as before were made and the foot forcibly extended to its normal axis. This type of physiotherapy was continued at intervals for several weeks until function remained normal. The animal was turned to pasture. Functional repair has remained good and now, two years postoperatively, restoration of function remains 100 per cent, the mare carrying out her normal activities daily.

Summary.—A gliding Z-tenotomy was performed by standard surgical techniques without complications of consequence on a mare.

Conclusions.—The standard operations of orthopedic surgery may be applied to the horse with good results, if careful attention is given to aseptic methods.—*W. W. Goodhue, M.D., and J. M. Hendershot, D.V.M., Kahului, Maui, T. H.*

A 1 per cent fluorescein dye dropped on the cornea will reveal the most minute corneal ulcers. . . . Glaucoma shouldn't, but can easily, be confused with postorbital abscesses.—*R. E. Ruggles, D.V.M., Illinois.*

CLINICAL DATA

Clinical Notes

Always have an authorization for euthanasia signed before putting a dog "to sleep." It is the only way to avoid trouble.—*E. J. Frick, D.V.M., Kansas.*

Bovine brucellosis is transmitted to man more often by direct contact with the animals on the farm than through consumption of infected milk.—*W. A. Hagan, D.V.M., New York.*

Ascites and anasarca, commonly called water belly, was common in several lots of poults during 1949. The condition seemed to be the result of feeding excessive amounts of sodium chloride.—*J. S. Glover, D.V.M., Ontario.*

The rearing of fur animals in captivity magnifies the problem of control of infectious and parasitic diseases which often cause serious losses that can be combated only by the development of new knowledge.—*J. L. West, D.V.M., Wisconsin.*

An ointment made of oil of citronella and fiber grease makes an excellent application for the outside edges of dogs' ears to protect them from flies. . . . In the treatment of otitis, what is removed is more important than what is put into the ear. Ears must be handled gently and carefully.—*R. E. Ruggles, D.V.M., Illinois.*

Complement Fixation in the Diagnosis of Bovine Trichomoniasis.—There may be reason to doubt that a pathogenic microorganism consistently mobilized on the surface of a mucous membrane without penetrating beyond, as in the case of *Trichomonas foetus*, can cause the forming of antibodies detectable by laboratory methods. The other serologic tests having been proved to be delicate and uncertain, Florent (*Zooprofilassi*, Rome, Dec., 1948) conducted a series of experiments with fixation of alexin that left no doubt as to its value in the diagnosis of bovine trichomoniasis. The experiments also revealed that, notwithstanding the surface character of the infection, there exists a humoral reaction to the presence of the organism on the vaginal mucosa.

Equine virus abortion has been diagnosed in at least 12 states and probably is present in many others.—*D. W. Bruner, D.V.M., New York.*

When a man is a veterinarian, in the eyes of the public he is a veterinarian regardless of what phase of the profession he might be in. His conduct reflects on the entire profession.—*E. L. Dicke, D.V.M., Kansas.*

Cattle deaths from the effects of lice have been reported, but more often losses from lousiness are shown in the failure of calves to grow and of cows to produce milk or beef.—*C. A. Herrick, Ph.D., Wisconsin.*

Feeding pigs lightly just before treating with anthelmintic capsules provides an adequate supply of saliva to lubricate the capsules so that they will be swallowed and not coughed up after the pig is released.—*A. G. Krause, D.V.M., Iowa.*

Control of Tetanus Convulsions.—Tetanus convulsions, as well as trauma resulting from injuries sustained during convulsions, may be controlled practically and adequately by oral, rectal, or intravenous paraldehyde. Curare has a great appeal to some practitioners, but prolonged curarization, as is needed in tetanus convulsion control, has a lethal effect itself in spite of artificial maintenance of respiration.—*Cur. Med. Digest, Nov., 1949.*

Relative Side Effects of Antihistamines

A study of six widely used antihistamine drugs showed neohetramine to be the least toxic in therapeutically effective doses (Schwartz, *Ann. Allergy*, Nov.-Dec., 1949). Drowsiness, headache, dizziness, nervousness, fatigue, and nausea occurred with all six drugs. Drowsiness was the most common, predominantly so in cases treated with benadryl. The six products tested, in declining order of incidence of side effects, were benadryl, pyribenzamine, neo-antergan, antistine, histadyl, and neohetramine.

Nematode Dermatitis in Cattle Associated with Rhabditis

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THE LITERATURE on nematode dermatitis in domestic animals has been reviewed.² Nematode dermatitis due to *Stephanofilaria* spp. has been reported in cattle in the United States, Java, the Malay Peninsula, and India. Dermatitis due to *Rhabditis strongyloides* has been reported in dogs in Europe³ and in the United States¹. Other cases of dermatitis associated with nematodes which may have been *Rhabditis* are discussed.¹

Rhabditis is a facultative parasite capable of either a free-living or a parasitic existence. It ordinarily lives free in the soil, in decaying vegetation on the surface of the soil, or in feces deposited on the soil. Occasionally, because of a particularly favorable combination of circumstances, it may invade the skin of an animal and cause dermatitis. Rhabditic dermatitis is, however, quite rare.

CASE REPORT

Since *Rhabditis* has apparently not been reported from cattle, 3 cases are presented here. In April, 1948, one of us (L.J.M.)



Fig. 1—Guernsey cow, 11 years old, with dermatitis associated with *Rhabditis* sp.

was called to treat a dermatitis in an 11-year-old grade Guernsey cow on a farm in central Illinois. On microscopic examination of skin scrapings, numerous small nematodes were found. Further examina-

tions were made of this animal and the nematodes were identified as *Rhabditis* sp.* They were cultivated on nutrient agar by the Department of Zoology, University of Illinois, and the cultures are still being maintained (December, 1949).

A second visit was paid to the farm a few days after the first one, and skin scrapings were again made. The cow appeared "rough" (fig. 1). The hair was falling out all over the body, particularly on the neck and flanks. The skin was coarsely wrinkled on the flanks, and thickened and scurfy on the flanks, belly, and udder (fig. 2). Some pustules were present, particularly on the udder and ventral surface of the body. They

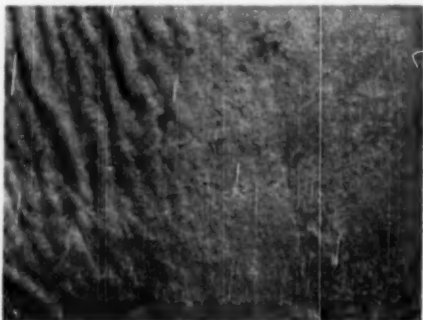


Fig. 2—Denuded, scurfy, and wrinkled flank of cow in figure 1.

ranged up to 1 cm. in diameter and usually contained thick yellowish caseous material. Some of the larger ones also contained blood (fig. 3). When a fold or wrinkle of the thickened skin which did not show definitely elevated pustules was squeezed between the fingers, the caseous contents of numerous deeper pus pockets were expressed. This material, as well as the contents of the pustules, contained the nema-

*Since this paper was submitted for publication, this nematode has been identified by Dr. B. G. Chitwood as *Rhabditis strongyloides*. Dr. Chitwood has also called our attention to his mention of this species in a mixed infection with *Stephanofilaria stilesi* in a skin specimen submitted from a Colorado bull (Chitwood, B.G.: A Nematode, *Stephanofilaria stilesi*, New Species, from the Skin of Cattle in the United States. North Am. Vet., 15, (June, 1934): 25-27).

From the Department of Veterinary Pathology and Hygiene (Levine, Morrill, Mansfield), College of Veterinary Medicine and Agricultural Experiment Station, University of Illinois, Urbana; and practitioner (Miller), Lincoln, Ill.

todes. Most were larvae, but a few adults were also present. A second cow in the herd was also found to be affected, but to a much lesser extent.

The first cow had been purchased in late March from a Hereford farm, where she had been used as a nurse cow. At that time, about three weeks before our examination, dermatitis was not observed. On the Hereford farm, she had been kept in a roomy, concrete-floored stall with plenty of straw bedding, and had had access to a well-drained, sandy lot.

Another grade Guernsey nurse cow which had been in the next stall was examined, as were several Hereford cows and calves in a herd which had access to the lot and to another part of the barn. A mild dermatitis was noted on the udder and lower abdomen of the nurse cow, and Rhabditis was found in the lesions. Although a scurfy, chronic dermatitis was present along the midventral fold of most of the beef cows, no nematodes or other parasites were seen in scrapings made from the lesions.

It is probable that the cow in which the dermatitis was first seen had already been infected at the time of purchase. Her condition may have been exacerbated by the change in living conditions.

On the second farm, the cow was kept with about ten others in a small bluegrass pasture adjacent to the barn. During milking, the cows were stanchioned in a single row in a concrete-floored barn. There were no partitions between cows in adjacent stanchions. At the time of our second visit, the barn floor and gutters were clean, and there was no bedding on the floor. The gutters were shallow; the platforms were so short that when the cows lay down, their hind quarters rested in the gutter. If this had been filled with damp bedding, the skin which came in contact with it would have been kept continually moist. This would have provided a suitable environment for the development of nematodes.

No flies or external parasites other than the nematodes were noted.

The cow was purchased and brought to the University of Illinois for experimental treatment. She was placed in a clean, dry box stall with plenty of straw bedding. Within a few days, it was noted that Rhabditis was becoming increasingly difficult to find. Hence, no treatment was attempted, and the animal was simply held and examined periodically. Her condition improved steadily. In about two weeks, Rhabditis could no longer be found, the pustules were drying up and disappearing, and the hair was growing back. In another month, the animal appeared quite normal, and was sold for slaughter.

The second affected cow in the herd in which the condition was first noted also recovered spontaneously without treatment. The subsequent history of the third cow is not known.



Fig. 3—Udder of cow in figure 1. Note hemorrhagic pustules.

SUMMARY

Three cases of nematode dermatitis in dairy cattle associated with Rhabditis sp. are described. The principal lesions observed were a thickened, dry, scurfy, coarsely wrinkled skin, and numerous pustules from 1 to 10 mm. in diameter which contained both larval and adult nematodes, and depilation. When one animal was placed in a clean, dry box stall with plenty of bedding, the nematodes disappeared within two weeks and the dermatitis disappeared more slowly. Another affected cow also recovered spontaneously without treatment.

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lyoides) als Ursache eines Hautausschlages bei einem Hunde. Deutsche tierärztl. Wchnschr., 13, (1905): 269-270. (Cited by Chitwood, 1932.)

Viability of Restored Desiccated *Brucella Abortus* Vaccine

It has been demonstrated previously that *Brucella abortus* vaccine (strain 19) can be desiccated by lyophilization and, in the dried state, maintain its viability for periods greatly in excess of the stability period of comparable liquid vaccine.^{1,2} Since the desiccated vaccine was designed for use immediately after restoration, thorough studies of the stability of the restored vaccine were not made beyond a 24-hour period. Recently, consideration has been given to the use of multiple dose containers of *Br. abortus* vaccine and this has raised the question as to whether the final dose of the desiccated vaccine has sufficient stability to be effective several days or weeks after the vaccine was restored. In order to examine this point, studies were made to determine the viable counts that could be obtained following various periods of storage of lyophilized vaccine in the restored (liquid) state.

METHODS

Two lots of *Br. abortus* vaccine, designated lot 1 and lot 2, were prepared according to the method of Verwey³ but were adjusted to twice the usual bacterial concentration. The containers were lyophilized, sealed under vacuum, and stored for 107 and 97 days, respectively, at 2 to 5 C. (35 to 41 F.). Counts made immediately after lyophilization and before storage indicated that these vaccines contained 25 and 32 billion viable bacteria per cubic centimeter, respectively. The contents of representative containers then were restored to their original volume by the addition of 15 cc. of sterile distilled water. Viability was determined by dilution plate counts carried out in duplicate in tryptose agar poured plates as previously described.¹ These plates were incubated for five days at 37 C., and the number of viable organisms per cubic centimeter of vaccine was determined from calculations of the average colony counts appearing on the plates representing various dilutions of the material. After the initial samples had been withdrawn from the vials, they were stored in a refrigerator at 2 to 5 C. for the duration of the experiment, except when they were removed for subsequent sampling.

From the Medical Research Division, Sharp & Dohme, Inc., Glenolden, Pa.

The experiments were concluded when the contents of each vial were exhausted. Table 1 gives the results of these tests.

The restored vaccine was completely stable for at least thirty-six days, and even after ninety days the counts were 13.7 and 19.2 billion per cubic centimeter, respectively. The regulations of the Bureau of Animal Industry require that liquid *Br. abortus* vaccine contain at least 10 billion viable bacteria at the time of manufacture, and that the vaccine contain at least 5 billion organisms at the expiration of its ninety-day dating period. Since these two lyophilized vaccines were made to have twice the usual organism count, the fact that both vaccines exceeded 10 billion after ninety days' storage in the liquid state indicated a stability comparable to that of fresh liquid vaccine. These data demonstrate clearly

TABLE 1—Viability of Desiccated *Brucella Abortus* Vaccine During Storage at 2 to 5 C. After Restoration

Storage time (days)	Viable organisms per cc.	
	Lot 1	Lot 2
0	20.2 billion	25.7 billion
7	19.4 billion	26.1 billion
14	19.0 billion	25.6 billion
21	19.6 billion	27.5 billion
28	19.3 billion	23.1 billion
56	20.1 billion	25.5 billion
90	13.7 billion	19.2 billion

that lyophilization of *Br. abortus* vaccine (strain 19), using the technique described, does not result in any gross physiologic damage to the viable organisms that is reflected by lack of stability on restoration.

DISCUSSION

Since the introduction of *Br. abortus* vaccine desiccated by lyophilization in 1945, it has been used increasingly throughout the country with apparent success. Even though lyophilized vaccines meet all of the requirements of the Bureau of Animal Industry, concern has been expressed over the fact that a portion of the original viable bacterial population is destroyed during the process of lyophilization.³ This proportion may be as small as 10 per cent but usually is 40 to 60 per cent. Therefore, the vitality of the remaining viable organisms has been questioned on theoretical grounds.⁴ The experiments outlined in this report demonstrate clearly that restored vaccines maintain their viability in a manner analogous to freshly prepared liquid vaccines, even though the vaccines may have been stored for several months in the lyophilized state. These findings should not be construed as encouragement to hold restored vaccine in its liquid state any longer than is necessary,

since the vaccine contains no preservative and, in the liquid state, is just as susceptible to contamination as is the older fluid-type vaccine. However, it would appear that restoration of lyophilized *Br. abortus* vaccine may be carried out safely in the veterinarian's office prior to a field trip, provided the usual precautions for refrigeration in the field are observed. This procedure, which now may be justified on the basis of experimental observations, has the advantage of permitting restoration under more favorable hygienic conditions than frequently can be found on the farms where the vaccine must be used.

SUMMARY AND CONCLUSIONS

Brucella abortus vaccine desiccated by lyophilization was restored to its fluid state and its viability was determined over a period of ninety days' storage at 2 to 5 C. No evidence of significant decreases in viability were observed over a 36-day period of storage and, even after ninety days, 68 and 75 per cent of the initial restored viable count were found. These results indicate that lyophilization had not caused significant physiologic damage to the viable organisms in the vaccine. Restoration of lyophilized *Br. abortus* vaccine in the veterinarian's office prior to a trip to the field, therefore, would appear to be a safe and practical procedure, provided that the usual precautions for refrigeration are observed. —W. F. Verwey, D.Sc., and Clara Matt, Glenolden, Pa.

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Deer, moose, and elk are often highly important in controlling liver fluke disease in cattle.—A. A. Kingscote, D.V.M., Ontario.

Better Rabies Vaccine.—Bell, Wright, and Habel (Proc. Soc. Exptl. Biol. & Med., March, 1949) describe a method of producing rabies vaccine freed of the nitrogenous factor which causes allergic encephalitis.

Heartworm in Dogs

Heartworm infection has spread rapidly during recent years. This is due to the movement of dogs for breeding, training, and hunting, and the movement of dogs with service personnel during the war.

The microfilaria can live two or three years without maturing or changing from their larval form. The presence of microfilaria in the blood stream without adult worms in the hearts can most logically be explained by the fact that dirofilaria can localize in other areas.

The number of microfilaria in a blood film is not a reliable indication of the severity of the infection. The absence of microfilaria in the blood is not an indication of the recovery of an animal or a gauge for the efficacy of a treatment.

Emaciation is not a good indication for symptom of heartworm infection.

Indications or symptoms of heartworm infection that arouse the suspicion of practitioners where this infection is common are: (1) ascites, especially in the extremities; (2) moist skin lesions (occasionally, the microfilaria can be picked up by making skin scrapings of these moist skin lesions); (3) epistaxis; (4) hematuria; (5) posterior paralysis.

In making blood films for the detection of microfilaria, it is necessary to examine the slide immediately before the blood has time to clot.—W. W. Armistead, D.V.M., College Station, Texas.

Cannibalism in Poultry

Toe picking, to feather picking, to cannibalism are the usual steps in this vicious and serious habit. Not only chickens, but turkeys, ducks, and wild birds raised in captivity also develop the habit. The cause is not known, and the condition has not been produced experimentally. A genetic factor may be involved, or any one of several nutritional deficiencies may cause a depraved appetite.

Preventive factors commonly recommended (California Agric., June, 1949) include: (1) prevent overcrowding; (2) feed a complete ration (extra salt, fresh greens, added fiber, manganese); (3) supply adequate hoppers and fountains; (4) provide litter or devices to keep birds busy; (5) use ruby-colored lights.

When the habit has become established, antipick salves sometimes help, but debeaking is the surest method of control.

Cattle and Sheep Diseases in Australia

Dr. Hadleigh Marsh of the Agricultural Experiment Station, Bozeman, Mont., reports the following animal disease conditions in Australia after a visit there. Dr. Marsh sailed in November of 1948 and returned in March of 1949.

CATTLE DISEASES

Brucellosis is quite common in Australia and although there is no organized eradication program, vaccination is encouraged and is widely used.

Tuberculosis exists to a considerable extent in all the states and, although there is no general eradication program, there are several small areas which are accredited as tuberculosis-free.

Pleuropneumonia is enzootic in Queensland and occurs sporadically or occasionally in most of the other states but has not occurred in Tasmania. A complement-fixation test has been developed and an effective culture vaccine is being used.

Mastitis, an important disease in the dairy cattle sections, is caused by the same organisms as elsewhere and is handled in the same manner.

Piroplasmosis and anaplasmosis are both widespread in the northern part of Australia, and there has been no widespread attempt at tick eradication to eliminate these diseases.

Cattle husbandry and management is such that the animals are seldom roped and thrown. Because of the great lack of rail facilities for transportation, long drives are still customary, the cattle being on the trail for many weeks in some cases. Some of the more distant ranges use an entire year to drive their cattle from the range to market.

The dairy cow of Australia is usually a Jersey, although the other common American breeds are seen. The milk cows depend mostly on grazing for their feed. There are no large dairy barns and the cattle are not housed. They are milked in parlors, mostly by machine.

SHEEP HUSBANDRY AND MANAGEMENT

About 80 per cent of all Australian sheep are maintained for wool production only, and about 80 per cent of them are run in flocks of more than 1,000 sheep. Some, 4,500 sheep stations carry more than 5,000 sheep each, and there are 38 stations which carry more than 50,000 sheep. The sheep range over all parts of Australia, and in those areas where rainfall is abundant, it may be possible to carry 1½ sheep per

acre, but in the dry areas it is not uncommon to have 1 sheep for each 12 acres or more. Regardless of the size of the flock, all sheep are run in fenced pastures called "paddocks." There is no herding.

Sheep management calls for spring and fall lambing. The usual American practice of checking each ewe at the time of lambing is not practiced. Some areas believe in having an attendant ride through the paddock once daily, but in other areas even this much attention is absent because the owners feel that there is too much disturbance of the ewes.

Docking and castrating are done with a knife. It is usual to wait until lambing has been completed, which means that some of the older lambs will be 4 to 6 weeks old before they are docked. The lambs are weaned when 4 to 5 months of age.

Most sheep ranches employ comparatively few laborers. It is the usual practice to have one man for each 2,500 sheep, although under some conditions this runs to 4,000 sheep per laborer.

PARASITIC DISEASES OF SHEEP

Myiasis or blow-fly strike, principally due to *Lucilia cuprina*, is one of the most serious disease conditions of Australian sheep. The most common point of attack is the breech and its prevalence has led to widespread use of the Mules operation to obliterate the folds at the breech. In addition, crutching or clipping the wool in this area is practiced throughout Australia.

Sheep ticks (*Melophagus ovinus*) are present in the high-rainfall areas, that is, when 20 inches or more annually is usual. Lice are fairly common. Ticks and lice are controlled by dipping or by spraying after shearing, which is required by law if sheep are infested.

Liver flukes (*Fasciola hepatica*) also occur in the high-rainfall areas and are controlled as in the United States. Mange mites are unimportant in Australia.

The intestinal parasites seem very much the same as those in the United States and they are controlled in much the same way with copper sulfate and nicotine solution and phenothiazine suspension. Often, these treatments are used alternately. One important difference is that the phenothiazine is usually administered instead of being fed, because the feeding of salt is a disappearing practice in Australia.

Complement-fixing antibodies for *Haemonchus* and *Trichostrongylus* have been demonstrated in some interesting work along this line. In general, the antibody content of the serum shows an inverse relation to the fecal egg count.

INFECTIOUS DISEASES OF SHEEP

Contagious ecthyma, called infectious labial dermatitis or scabby mouth, appears throughout Australia but is not considered economically important. Enterotoxemia is prevalent where lambs are raised on improved pastures but is rare in the low-rain-fall areas.

Arthritis in lambs occurs as a result of infection at docking time. The organisms involved in this infection are *Erysipelothrix rhusiopathiae*, *Corynebacterium pyogenes*, as well as some of the staphylococci.

Other conditions which have been recognized and reported are infectious ophthalmia, sometimes associated with rickettsia; coccidiosis, similar to the disease seen in the United States; actinobacillosis which is treated with sodium iodide; anthrax, controlled by vaccination; blackleg which may occur in sheep even where no wound exists; caseous lymphadenitis, which is widespread; listeriosis is sometimes seen; vibronic abortion, reported only in Tasmania; anaerobic wound infections, malignant edema, and tetanus; black disease which is no longer considered a problem in Australia, being controlled by vaccination; foot rot, economically important in some areas; *Erysipelothrix* infection following dipping; mastitis; and mycotic dermatitis.

Notes on Small Animal Practice

Eye, Ear, and Throat.—Pontocaine hydrochloride (0.25%) instilled into the eye at one-minute intervals produces sufficient local anesthesia in five minutes to allow examination and instrumentation of the membranes. For acute tonsillitis and for wounds of the mouth and pharynx, a 5 per cent neoprontosil solution applied locally has good antiseptic penetration and slight astringent properties. For infections of the external ear canal—low grade, acute, or chronic—generous application of a 10 per cent sulfanilamide powder and 10 per cent sulfathiazole powder in cod liver oil produces good results. The drainage operation is recommended in chronic ear infections that do not respond to treatment and in cases of recurrent ear infection.

Digestive Tract.—Demerol, a morphine substitute, in doses of 50 to 100 mg. at four-hour intervals, controls vomiting due to gastrointestinal irritation but not vomiting due to uremia; it does not have the undesirable side reactions of morphine and is indicated as an analgesic for injury cases, fractures, and shock in dogs and cats. Strong laxatives and gastrointestinal lavage are losing favor in the treatment of indigestion; the trend is toward rest of the

tract by withholding food, and detoxifying and nourishing the animal with 5 per cent dextrose in saline. Puppies with heavy hookworm infection accompanied by severe anemia and intestinal hemorrhage frequently can be saved by daily treatment with citrated whole blood, 10 cc. per pound of body weight, and liberal doses of crude liver extract, intramuscularly. When sulfaguanidine, sulfathalidine, and sulfasuxidine fail to bring an intestinal infection under control, streptomycin often is effective because it combats many gram-negative organisms not affected by sulfonamides.

Kidney Diseases.—Copious treatment with 5 per cent dextrose in water (10 to 15 cc./lb. of body weight twice daily, plus an equal amount subcutaneously if dehydration is extreme) has brought us more recoveries in nephritic dogs than any other line of treatment. Patients with kidney damage should have a diet low in protein, but whatever protein is given should be of high quality, such as egg albumin and cottage cheese. Urinalysis and blood urea determination are the best means of diagnosing nephritis. The human x-ray catheter, which is easily passed with virtually no discomfort to either male or female, is a satisfactory catheter for dogs.

Laboratory Aspects.—Sulfonamides, penicillin, and streptomycin are being used widely in small animal practice, but the results are sometimes disappointing. The fault is not in the drugs but in lack of sound therapeutic principles of application. If the economics of small animal practice would allow for culturing and typing of the various infections instead of assuming that they are such-and-such, expressed by the terms "mixed infection" and "secondary invaders," we could aim our therapeutic agents more specifically and with much better results.

Nutrition.—Crude liver extract stimulates the appetite of convalescent patients and seems to have supportive value in leptospirosis; it also is recommended for pregnant bitches whose hemoglobin is below normal, for intramuscular treatment of puppies born weak and anemic (0.25 to 0.5 cc. of crude two-unit extract every 24 to 48 hours), for orphan litters being hand-raised, and for large litters where supplementation of the bitch's milk is required. Bed sores are often the result of hypoproteinemia and will heal rapidly after the nitrogen balance is corrected. Amino acids have a definite place in small animal practice, but many of these preparations cause vomiting when given orally. Intravenous amino acid preparations should be well diluted with saline and dextrose solution and

given slowly to avoid unfavorable reactions. Cod liver oil, known to stimulate the formation of epithelium, is the drug of choice for open wounds.—*W. F. Irwin, D.V.M., Iowa Vet., Nov.-Dec., 1949.*

Tonsils of a dog are similar to a refrigerator and an incubator. Infections apparently can lie dormant in them for months or years. On the other hand, they can certainly flare up and produce severe and extensive systemic infections. In our practice, we find that only about 20 per cent of the tonsils need to be removed. . . . Acute tonsillitis responds nicely to swabbing with 10 per cent silver nitrate. The systemic manifestations respond to a treatment of antibiotics and sulfonamides in combination.—*R. E. Ruggles, D.V.M., Illinois.*

Inclusion Bodies in Canine Distemper

A study of inclusion bodies in 28 cases of distemper in dogs, aged from 2 months to 4 years, by Sjolite (*Skand. Vet-Tidskr., 1947*), revealed the presence of cellular inclusions in the following tissues: trachea (14 cases); bladder (13); bile duct (12); lungs (11); renal pelvis (8); spleen (8); mesenteric glands (8); hippocampus (12). The number varied from few to many, and in dimensions some were as large as the nuclei.

Phenamidine in Demodectic Mange in Dogs

The more I observe demodectic mange, the more I am convinced that not only is it congenital but also that puppies may be born infected. So far as topical treatment is concerned, many agents, such as rotenone and sulfur, can be relied upon to kill the superficial acari, but how are we to prevent continuous reinvasion of the follicles from within? A point to keep in mind is that it is hard to tell whether a Demodex, transferred from the skin to a slide, is dead or alive, because it never seems to move.

In my opinion, our only hope of overcoming this disease is through a drug parenterally introduced. Subcutaneous phenamidine, used against babesiosis in Africa, might prove to be the needed agent. Its potential value against demodectic mange was discovered accidentally, when Demodex-affected dogs under phenamidine therapy for babesiosis recovered completely from the mange without supplementary topical treatment.—*Hamilton Kirk, M.R.C. V.S., England.*

Antirabies Treatment

The *Annales de L' Institute Pasteur* of December, 1948, report as follows on antirabies treatments given in France during 1948:

Persons vaccinated	150
Paralytic accidents	0
Deaths	0

The Institute habitually divides treated persons into three categories: (A) persons bitten by animals proved by laboratory methods to have been rabid; (B) persons bitten by animals diagnosed as rabid by veterinarians; (C) persons bitten by animals suspected of having rabies. The patients are further classified as to whether the bite was deep or superficial, through clothing or on bare skin, and the region bitten (head, arms, trunk, legs); further classification is made into five classes as to the time between the bite and the start of the treatment. Since the Institute began antirabies treatment in 1886, its personnel has vaccinated (in France) 55,140 bitten persons. Of these, 7,084 belonged to category A, 27,191 to category B, and 20,865 to category C, meaning that the clinical diagnosis of veterinarians accounts for the greatest number of people treated to save them from the horrible death.

Of the total treated, there were only 151 deaths (0.28%). Without coaching, the small animal group would not hesitate to guess that some of these deaths were preventable.

Feline Infectious Enteritis

Nomenclature on feline enteritis is confusing. The disease has been described as aleucocytosis, infectious agranulocytosis, panleucopenia, infectious gastroenteritis, cat typhus, pseudomembranous enteritis, laryngoenteritis, and cat distemper. It is usually found in animals under 1 year old.

Although British and French workers have distinguished two diseases, each caused by a different virus, there is no conclusive evidence that infectious gastroenteritis and panleucopenia are distinct entities. A purified potent virus must be obtained before an effective vaccine can be produced.—*M. Josephine Deubler, V.M.D., Ph.D., Vet. Extension Quart. 114, April 3, 1949.*

The Bureau of Animal Industry alone does not control any disease. It invites and requests the cooperation of practicing veterinarians and of livestock owners.—*T. K. Jones, D.V.M., Indiana.*

Anthelin—A New Compound for Removing Tapeworms and Roundworms from Dogs

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THIS PAPER reports the results of a limited study of the tapicidal and ascaricidal properties in dogs of a new synthetic anthelmintic, N-methyl tetrahydro methyl nicotinate-p-carboxyphenyl stibonic acid (anthelin).

The incidence of tapeworm and ascarid infections in dogs has been investigated by various workers with widely varying results depending upon the geographic location of the area studied and the method employed in determining the incidence of infection. Thus, Wright,¹ in a postmortem study of 150 dogs in Washington, D. C., found that 68 per cent were infected with *Dipylidium* and 40 per cent harbored ascarids. Cross and Allen,² in postmortem examinations of 100 dogs in Chicago, reported 39 per cent to be infected with *Dipylidium* and 23 per cent to be infected with ascarids. Koutz and Rebrassier,³ however, in a survey of 1,486 dogs received at the veterinary clinic of the Ohio State University, found tapeworms in only 7 per cent, but stated that tapeworms "... are much more commonly found but these reports are based on the presence of ova found in the feces, and not on the presence of proglottids." These investigators reported an ascarid incidence of 21 per cent. Whitney⁴ reported that 18 per cent of 1,492 dogs from the central, eastern, and north-eastern areas of the eastern United States harbored tapeworms and that 21 per cent had ascarids. The author further stated, "Probably tapeworm infection is far more prevalent than this study indicates. . . diagnosis of tapeworm infection by fecal examination is not completely reliable except where findings are positive."

In view of the above findings, tapeworm and ascarid infection in dogs is doubtless widespread. Among the drugs that have been used in the treatment of these infections are various plant products, halogenated hydrocarbons, terpenes, dyes, and a wide variety of other natural and synthetic

products too numerous to mention. Some of these are effective in ridding an animal of either tapeworms or ascarids, but few are effective in combating both simultaneously, and still fewer are consistently highly effective in the single treatment of these infections. An anthelmintic possessing efficient, dependable action against both of these parasites would be of value to the practicing veterinarian and find wide application in the treatment of these infections.

Previous work in this laboratory indicated that certain antimony compounds possessed some anthelmintic activity. During the course of an investigation into their anthelmintic properties, the following compounds were prepared and screened for activity: N-methyl tetrahydro methyl nicotinate-p-carboxyphenyl stibonic acid (anthelin), N-methyl-tetrahydro methyl nicotinate phenyl stibonic acid, N-methyl tetrahydro methyl nicotinate-p-toluene stibonic acid, N-methyl tetrahydro methyl nicotinate-3-nitro-p-toluene stibonic acid, monochloro antimony-4-methyl dithiocate-



Fig. 1—Pup 161 eliminating tapeworms seventy-seven minutes after treatment.

We wish to thank Dr. C. H. Anthony and Mr. V. H. Jenkins for assistance in the postmortem examinations, and Dr. R. W. Price for identifying the helminths.

From the Pharmaceutical Research Laboratory, the Jensen-Salsbery Laboratories, Kansas City, Mo.

cholate, di [ethyl-2-(thio-antimony catecholate)] methylamine, and 1-chloroantimonyl-2,8-dithia-5-methylaza-cyclooctane. On the basis of the screening tests, anthelin was selected for evaluation.

RESULTS

The worms eliminated in the tests were identified as *Dipylidium caninum*, *Taenia* of unidentified species, *Toxocara canis*, and *Toxascaris leonina*. Elimination of the

TABLE 1—Percentage Efficiency of Worm Removal of Anthelin

Animal (No.)	Weight (lb.)	Approx. age	Tapeworms		Ascarids		Efficiency for		Toxic symptoms
			expelled	retained	expelled	retained	tapeworms	sucarids	
4	21	8 mo.	105	16	4	0	87%	100%	nausea
161*	13	8 mo.	146	0	0	0	100%	.....	none
174	13	5 mo.	23	0	0	0	100%	.....	none
188*	13	6 mo.	25	0	1	2	100%	33%	none
178*	19	7 mo.	3	0	0	0	100%	.....	nausea
406	31	3½ yr.	48	0	7	0	100%	100%	none
497*	21	2½ yr.	3	0	0	0	100%	.....	vomiting
825	27	2 yr.	236	6	9	0	98%	100%	none
875	24	3 yr.	4	0	0	0	100%	.....	none
981	20	3½ yr.	106	0	0	0	100%	.....	none
Totals and averages			667	22	21	2	97%	91%	

*Lentin administered subcutaneously.

METHODS

The animals used in the determination of the efficiency and toxicity of anthelin were chiefly stray mongrels. Infected animals were selected on the basis of fecal examination for proglottids. Test animals were confined in individual pens and given one dose of anthelin (4.69 mg./lb. of body weight) approximately eighteen hours after a light meal (about half the regular meal). Food was withheld until four hours after dosing, although free access to water was allowed.

The animals were observed continuously for at least three hours after treatment and intermittently thereafter throughout twenty-four hours. In cases where purging did not occur in an animal within sixty minutes after dosing, 1 to 1.5 cc. of lentin was administered subcutaneously. Feces and worms were collected immediately after passage for the first three hours, and the balance of a 24-hour sample was collected at one time at the end of this period. Feces and worms were preserved in 10 per cent formalin. When a 24-hour sample had been collected, the material was suspended in 10 per cent formalin in shallow glass trays placed on a black background. Worms were separated, placed in fresh 10 per cent formalin, examined microscopically, and heads counted. Twenty-four hours after dosing, the animal was sacrificed and the intestinal tract and stomach removed and dissected. The entire tract and its contents were examined for worms and counts made as described above. The percentage efficiency of worm removal by anthelin is expressed as the ratio of worms expelled to the total number of worms.

In tests on the toxicity of anthelin, animals were given twice the recommended dose on three consecutive days. The first dose was given approximately eighteen hours after a light meal and food was then withheld until four hours after the last dose was given.

worms generally occurred within three hours after dosing. All animals were normal in appearance and action twenty-four hours after dosing. The animals used in the toxicity tests were normal twenty-four hours after each dose and were still normal thirty days after the last dose when observations were terminated.

On postmortem examination, the intestinal tracts of all the animals were normal in appearance with the exception of 4 and 406, the tracts of which showed moderate irritation, and 161, which showed severe irritation. The stomachs of all animals were normal.

Table 1 gives the percentage efficiency of anthelin in removing tapeworms and roundworms from dogs; table 2 shows results of toxicity tests.

SUMMARY

In a limited study, a new synthetic anthelmintic—anthelin (N-methyl tetrahydro methyl nicotinate-p-carboxyphenyl stibonic acid) has been found to be effective in the removal of tapeworms and ascarids in dogs. At a dose of 4.69 mg. per pound of body

TABLE 2—Toxicity of Anthelin in Twice the Recommended Dose

Animal (No.)	Approx. age	Toxic symptoms		
		1st dose	2nd dose	3rd dose
172	8 mo.	nausea depression	.....	.....
156	8 mo.	straining	.....	.....
194	5 mo.	vomiting	.....	.....
195	5 mo.	nausea	.....	.....
22	8 mo.	none	depression	vomiting
72	1 yr.	depression	depression	none
277	3 yr.	depression	nausea	none
358	2 yr.	none	nausea	none

weight, anthelin removed 697 (97%) of 719 tapeworms (*Dipylidium caninum* and *Taenia* species) and 21 (91%) of 23 ascarids (*Toxocara canis* and *Toxascaris leonina*) in 10 dogs.

Twice the recommended dose of anthelin administered to dogs on three consecutive days showed good tolerance.

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A hemophilia-like disease, probably hereditary, has been observed in Aleutian male mink. Slow-bleeding cases sometimes can be saved by prompt treatment with rutin, vitamin C, vitamin K, or subcutaneous thromboplastin.—T. T. Chaddock, D.V.M., Am. Nat. Fur & Market J., Oct. 1949.

A good small animal hospital should have the following attributes: (1) freedom from odors; (2) neat, clean reception room with a clean floor; (3) clean, odorless cages in all wards; (4) hard-surfaced, isolated, exercise runs.

A really clean animal hospital not only makes a good impression on clients, but it also inspires better work from professional and lay workers and reduces spread of disease between patients.—R. E. Ruggles, D.V.M., Illinois.

AVMA Eighty-Seventh Annual Meeting—Miami Beach, Aug. 21-24, 1950



—Miami Beach News Bureau

Swimming and sun-bathing along the palm-bordered sands of the oceanfront provide entertainment and relaxation at Miami Beach where the eighty-seventh annual AVMA session will be held Aug. 21-24, 1950.

Isolation of Newcastle Disease Virus from Commercial Fowlpox and Laryngotracheitis Vaccines

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RECENTLY, a few outbreaks of Newcastle disease were detected in Minnesota, in which the affected flocks had been vaccinated previously against fowlpox or laryngotracheitis. Since all other possible sources of infection were carefully eliminated, we had reason to suspect that the commercial fowlpox and laryngotracheitis vaccines used were the source of infection. To check this observation, e.g., that the commercial fowlpox and laryngotracheitis vaccines were contaminated with live Newcastle disease virus (NDV), the following experiments were carried out.

COMMERCIAL FOWLPOX VACCINE

A suspension of the fowlpox vaccine was made as directed by the manufacturer. The suspension was treated with streptomycin and penicillin for ninety minutes at room temperature and 0.2 ml. of the suspension injected into the allantoic cavity of 3 embryonated eggs incubated for ten days. The embryos died on the fourth and fifth day after inoculation. The chorio-allantoic membrane showed characteristic pox plaques. The allantoic and amniotic fluids were harvested and were subjected to the following tests for the presence of NDV.

1) First, a hemagglutination test was conducted on the pooled allantoic and amniotic fluids, according to the instructions issued by the USDA dated Aug. 15, 1946. This gave a hemagglutination test in a titer of 1:512. This result indicated the presence of live NDV in the commercial fowlpox vaccine under test.

2) Ten chickens which were H.I. (hemagglutination-inhibition) negative to NDV were used. Five were kept as controls and the remaining 5 were vaccinated with 0.2 ml. of the pooled allantoic and amniotic fluid harvested from eggs inoculated with fowlpox vaccine. These birds were kept under observation for ten days. No clinical signs of any disease were noticed in the inoculated or control birds. On the

tenth day, all the chickens were bled and a H.I. test was run on the pooled serum of 5 chickens of the control group and the other 5 which were vaccinated with the fowlpox vaccine. The H.I. titer of the control group remained negative while that of the vaccinated group was 1:2,048. It can be assumed that the rise in H.I. titer of the serum of the vaccinated chickens was due to the presence of NDV in the fowlpox vaccine.

3) In order to obtain further proof that the fowlpox vaccine contained live NDV, the chickens in both the control and the vaccinated groups were challenged, on the eleventh day following initial pox virus vaccination, with virulent NDV No. 11914, which was known to be highly pathogenic to chickens. The virus was given subcutaneously in doses of 0.1 ml. Within five days, all the control chickens died, but those which were vaccinated with the commercial fowlpox vaccine were unaffected. So far (90 days after being challenged), they have shown no sign of ill health. Newcastle disease virus was recovered from the control chickens which died as a result of inoculation of virulent NDV.

The above observations give a convincing proof that the commercial fowlpox vaccine under test at some stage in the manufacture was contaminated with NDV. Since the chicken embryos did not die within forty-eight to seventy-two hours after inoculation, and as characteristic fowlpox plaques were seen on the chorio-allantoic membrane, the fact of contamination of the pox virus with NDV was overlooked. Whether such contaminated pox vaccine can give rise to new foci of Newcastle infection remains to be ascertained.

COMMERCIAL LARYNGOTRACHEITIS VACCINE

Outbreaks of Newcastle disease were also detected in flocks which had been vaccinated a few days previously against laryngotracheitis. There was evidence to suggest that the source of infection might be contaminated laryngotracheitis vaccine. To check this presumptive finding, the suspension of laryngotracheitis vaccine was injected into the allantoic cavity of 3 eggs containing 10-day-old embryos. The embryos died within seventy-two to ninety-six hours.

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Deputy director of veterinary sciences, C. P. and Berar, Nagpur, India, on deputation to the University of Minnesota (Zargar); Division of Veterinary Medicine, University of Minnesota (Pomeroy).

Aseptically, the allantoic and amniotic fluids were harvested. The chorio-allantoic membrane in each of the 3 cases showed characteristic plaques of laryngotracheitis. The pooled amniotic and allantoic fluid was subjected to the following tests and the results noted were as follows:

1) A Hirst hemagglutination test which was conducted on the pooled allantoic and amniotic fluids yielded a positive result in a titer of 1:1,024.

2) Five chickens known to be H.I.-negative were inoculated with 0.2 ml. of a 10^{-1} dilution of the egg fluid. The 5 chickens which were used as controls for the pox vaccine experiment were used as controls for this experiment as well. On the tenth day following vaccination, all chickens were bled. The H.I. titer of the pooled serum from the vaccinated chickens was 1:2,048, while that of the control remained negative. This indicated that the laryngotracheitis vaccine under test was contaminated by the NDV at some stage of the process of manufacture.

3) In order to prove that the chickens which were vaccinated with laryngotracheitis vaccine were actually immunized against Newcastle disease, they were challenged with highly pathogenic NDV No. 11914. The virus was given subcutaneously in doses of 0.1 ml. While all controls died of Newcastle disease within five days, those which had been vaccinated with laryngotracheitis vaccine did not show any signs of ill health. The chickens have been under observation more than ninety days and have not shown any signs of infection. It is evident from the above observations that the commercial laryngotracheitis vaccine was also contaminated by NDV at some stage of production.

DISCUSSION

Egg-propagated live virus vaccines against fowlpox and laryngotracheitis have been accepted and successfully employed on a large scale for the control of the diseases. The vaccines used are in no way ideal, yet they have given fairly good results in the field in controlling the diseases. In the process of manufacture, egg-propagated live virus vaccines may become contaminated and, unless tests for purity are made to exclude the presence of extraneous viruses, the use of such commercial vaccines may be of great risk to the poultry industry.

SUMMARY AND CONCLUSION

1) Results are reported on the tests on commercial fowlpox and laryngotracheitis vaccines.

2) Newcastle disease virus was isolated from fowlpox and laryngotracheitis vaccines.

3) The contaminated vaccines were responsible for the introduction of Newcastle disease into several poultry and turkey flocks.

Venom Toxicosis.—A grave case of multiple bee-sting reported in the *Bulletin of the U. S. Army Medical Department*, responded to two, 10 cc. intravenous injections of 10 per cent calcium gluconate given at an interval of twelve hours. Epinephrine and local dressings had failed. The assumption was that the calcium gluconate neutralized the venom. Comments *Jen-Sai Journal*: a worthy thought in the treatment of mass stings of animals by other venomous insects (hornets, wasps, bumblebees).

Bovine tuberculosis has become so scarce that schools of veterinary medicine sometimes have difficulty in getting infected cattle for teaching purposes. Therefore, when tuberculous reactors are brought to slaughterhouses near the schools, arrangements should be made to hold the animals for retest and postmortem study by students.—*Asa Winter, D.V.M., U. S. Bureau of Animal Industry.*

It was reported at the International Veterinary Congress in London last year that 35 per cent of the cattle herds in England are affected with tuberculosis.—*D. C. Wood, D.V.M., Indiana.*

Veterinarians from Finland report that some tuberculin reactions they get in cattle are actually allergic reactions from exposure to human beings who are affected with tuberculosis.—*D. C. Wood, D.V.M., Indiana.*

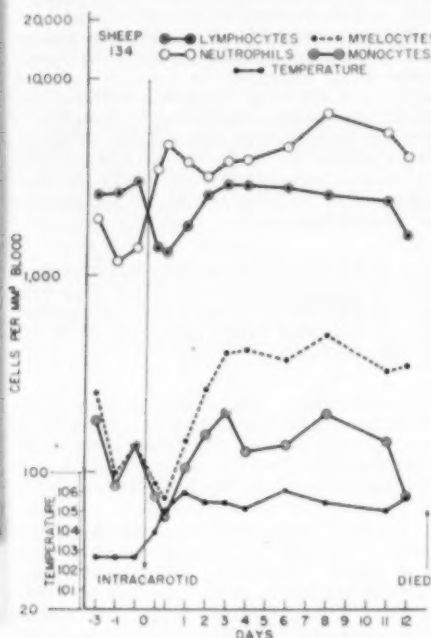
The beef cattle condition which we are most frequently called on to treat is shipping fever. The most satisfactory treatment in our hands is the injection of 100 to 200 cc. of hemorrhagic septicemia antiserum before the calves are put into the feedlot.—*John Shoeman, D.V.M., Iowa.*

Agalactia Unguentum.—An ointment containing 1 per cent diethylstilbestrol rubbed well into the skin of a "lazy" udder, before and after parturition, steps up lactation, say Peeters and co-authors in the *Veterinary Record*. Besides the local action, the ointment augments milk secretion by stimulating the anterior lobe of the pituitary gland.

Experimental Listeriosis of Sheep

Listeriosis* was produced experimentally by exposing sheep to *Listeria monocytogenes*, using a 24-hour culture grown in tryptose broth at 37 C. In all, 28 adult sheep were studied in 63 exposures by different routes. The amount of culture used varied with the mode of exposure. In order to establish a basis of comparison, 259 observations were made on 19 normal sheep, and on 2 sheep which were injected with tryptose broth and with fractions of the broth.

The carotid artery was the site of injection in 18 trials on 17 sheep, using 0.05 cc.



Graph 1—Leucocyte counts and temperatures on sheep before and after exposure to *Listeria monocytogenes*. Counts of leucocytes are plotted on logarithmic scale and temperature values follow arithmetic progression. Sheep 134 was given a culture of *L. monocytogenes* in the carotid artery and had no previous exposure. On the day of exposure (0), the two postexposure counts were made at two and five hours. The persistent increase in neutrophils and temporary decrease of lymphocytes with a continuously elevated temperature is typical of an experimentally produced, fatal listeriosis.

of culture per pound of body weight. Of these, 5 had not been previously exposed, and all died. Of 8, with one previous inoculation, 3 died; but 5, which had been exposed six to nine times previously, survived.

Intracerebral injection of 0.25 cc. of culture was fatal to 6 of 8 sheep, only 1 of which had no previous exposure to listeriosis.

Intravenous injection, at the rate of 0.1 cc. of culture per pound of body weight, was not fatal to any of 7 sheep so exposed — although 2 had no previous exposure, 2 had been exposed once previously, and 3 others had been used seven to ten times previously.

Subcutaneous injection (0.05 cc./lb.) was tolerated by all 9 sheep in 11 trials, regardless of previous exposure. The median artery was used in 2 sheep for injecting culture (0.05 cc./lb.) without fatal results. Intradermal injection of 0.25 cc. of culture was tolerated by 5 sheep; as was intratibial (into the bone marrow) injection in 5 others. Culture was injected into the biceps femoris muscle (0.25 cc./lb.) of 4 sheep and was administered *per os*, in gelatin capsule, to 3 sheep. All had been previously exposed and all survived.

Considerable variation was observed in the way sheep react to exposure with *L. monocytogenes*. The two principal factors which determine the type of reaction are

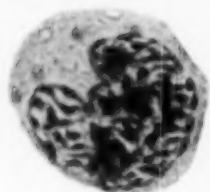
*This is a condensation of "The Reaction of Blood Cells in Experimental Listeriosis of Sheep" by Carl Olson, Jr., D.V.M., R. H. Cook, D.V.M., and Ida C. Blore, M.S., in the *American Journal of Veterinary Research*, 11, (January, 1950): 29-40.

Legend for Color Plate on Opposite Page

Water color reproductions of cells found in circulating blood of sheep. Cells 1 to 11 represent developmental stages of neutrophils. Cell 1 is most immature and cells 10 and 11 represent adult cells.

Variations in the rate of development between nucleus and cytoplasm are evident in cells 4 and 6 where the nucleus has begun to lobulate and the cytoplasm is relatively more primitive.

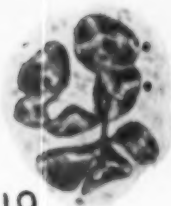
Cells 12 and 15 are lymphocytes; cell 13 is an eosinophil; cell 14 is a monocyte; and cells 16 are erythrocytes. Wright's stain; water color reproduction; the cell outlines were drawn with a camera lucida.



5



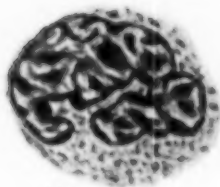
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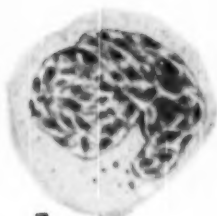
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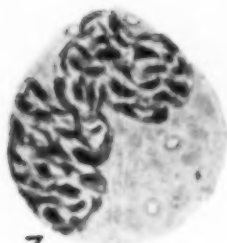
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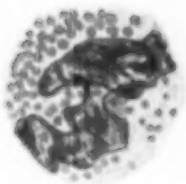
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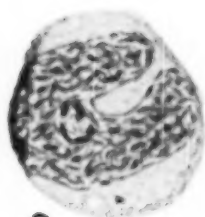
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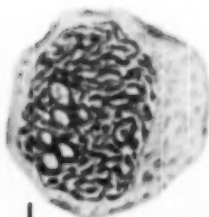
2



6



14



10 μ



12



15



16



the method of exposure and previous contact with the organism. In general, there was an immediate increase of neutrophils and a decrease of lymphocytes, along with a rise in body temperature. Fatal infections were induced only when the exposure was by intracarotid injection or by intracerebral inoculation.

The sudden and rapid demand for neutrophils brought many immature stages of these cells into the circulating blood. The color chart which accompanies this report illustrates the various developmental stages observed. Sheep previously exposed were relatively resistant to subsequent exposure, developing less deviation in the blood picture and recovering more rapidly.

Radioactive Thyroprotein

Radioactive thyroprotein was administered in solution intravenously, orally, and through rumen, small intestine, and cecal fistulas. The material injected intravenously in sheep had nearly all disappeared from the blood within seven hours. The nature of the activity following absorption in the blood is not completely known.—*Purdue University, Lafayette, Ind.*

Copper Toxicity in a Steer

Postmortem findings of a steer poisoned with copper were generalized icterus; dirty-yellow fat and membranes; hemolysis; hemoglobinuria; urinary bladder distended with more than 2 qt. of brown to black urine; kidneys enlarged and showing glossy black marbled surface when removed from the capsule; lungs poorly collapsed; spleen enlarged, soft, and dark; liver yellowish with a hard surface; and gall bladder distended with dark bile about the consistency of 600 W grease.—*R. W. Kidder, M.S., Everglades Experiment Station, Belle Glade, Fla.*

Trichinosis in Arctic Animals.—Occurrence of severe trichinosis in a bearded seal in northwestern Greenland shows that marine mammals are susceptible (*Canad. J. Comp. Med.*, Sept., 1949). Apparently, the disease is widespread in arctic sledge dogs, judging from an incidence of 46 cases in 66 dogs examined. Numerous cases also were seen in Polar bears and foxes.

Almost every dog needs some dental work. . . . We use sodium pentothal for all dental work and other surgery in old dogs.—*R. E. Ruggles, D.V.M., Illinois.*

Conteben

Conteben, named also Tbl/698 (tee-bee-one) by the makers, is a new chemotherapeutic agent possessing curative properties in tuberculosis. Chemically, it is 4-aminoacetylbenzaldehyde thiosemicarbazone, and its maker is Farbenfabriken Bayer of Germany in cooperation with Domagk of sulfonamide fame. The activity of conteben depends upon a chainlike arrangement of the sulfur and nitrogen atoms, not upon the sulfone grouping or the thiazole rings. Domagk (*J. Am. M. A.*, Feb. 4) believes that the drug has a direct action on the tubercle bacillus *in vivo*, and he combines it with streptomycin in his experimental work on laboratory animals. Its use in 10,000 tuberculous patients in Germany and 2,000 in this country was promising enough to excite general interest.

Glanders Responds to Chemotherapy

Notwithstanding that glanders, even in horses, has become a rare disease in the United States and Canada where it once raged, the announcement (*J. Am. M. A.*, Jan. 7, 1950) of Turkey's Minister of Health that an acute human case responded promptly to streptomycin, penicillin, and sulfadiazine is fascinating to those familiar with that baffling horse plague. The Minister has seen 12 human cases of glanders in the last ten years, 3 cases in veterinarians from laboratory infection.

The case reported was that of a farmer, 37, who obviously contracted the infection from a supposedly glandered horse that had died undiagnosed. Ten days before admission to the hospital, the patient was stricken with chills, severe headache, and pains in his arms and legs which at the time of the examination were studded with painful, bluish swellings (pustules). The pulse was 125 and weak, the temperature 102.8 F. Bloody pus taken from the pustules revealed the presence of a gram-negative bacillus, identified as *Malleomyces mallei*. The patient was given 2 Gm. of streptomycin, 600,000 units of penicillin, and 2 Gm. of sulfadiazine. (Follow-up dosing not given.) The "farcy buds" began to recede on the fifth day and recovery was complete on the twenty-fourth day.

Poisons, skillfully used, often save lives, while supposedly harmless drugs sometimes are harmful. Therefore, "Potentially Dangerous" ought to be on the label of practically every drug sold without a doctor's prescription.

NUTRITION

Toxic Effects of Crude Ergot

IRENE ROSENFELD, Ph.D., and O. A. BEATH, M.Sc.

Laramie, Wyoming

FUNGUS infestation of rye, wheat, barley and many wild grasses has been recognized for centuries. Ergotism in animals has been observed when animals were feeding on the infested grain or grasses.

The toxic properties of ergot are due to pharmacologically active substances, which Barger¹ has divided into two groups: (1) those which are specific for ergot, and (2) those which can be obtained from other sources. The pharmacologically active specific ergot compounds are the alkaloids, ten or more of which have been isolated and identified. The important compounds in this group are: ergotoxine, ergotamine, and ergonovine. A heterogeneous collection of the second group contains inorganic constituents, acids, amines, bases, carbohydrates, glycerides, sterols, and amino acids. The amines and bases are of pharmacologic importance. In addition to the pharmacologically active groups, there are specific ergot pigments which serve as a test for the presence of ergot. The most important pharmacologic action of the active ergot alkaloids is the stimulation of the motility of the uterus. Ergot also produces vascular stasis (which provides the basis for the bioassay of ergot) and gangrene.

Recent investigations deal mainly with the various pharmacologically active fractions isolated from ergot, the study of crude ergot having fallen into disuse. Only fragmentary data is available at the present time on the toxic effect of crude ergot, a form which is most common in livestock poisoning. Recent studies of Nordskog and Clark² on the effect of crude ergot on lactation indicated that it reduced the vitality of the newborn and inhibited lactation in the dams.

In reviewing the recent literature, we were unable to find quantitative data on the minimum and maximum amounts of

crude ergot required to produce toxicity in animals. In view of this fact, we have studied: the minimum and maximum crude ergot dose; the influence of age and weight of the animals on the toxic effect of ergot; the effect of ergot on pregnant animals and their progeny.

MATERIALS AND METHODS

Ergot used in these experiments was collected from grasses in Wyoming or domestic ergot of rye collected in the central northwest.³ It was ground in a power mill to fine powder and mixed with ground Purina dog chow in 2, 5, 10, and 20 per cent concentrations. All ingredients were well mixed by continued shaking in order to eliminate the possibility of selection by the animals. The

TABLE 1—Effect of Various Concentrations of Crude Ergot on Experimental Animals

Animal (No.)	Ergot in feed (%)	Ergot consumed ^a (g)	Duration of life (days)	Initial weight	Final weight	Remarks
10 (F)	2.0	1.4	30	24.0	28.5	No ill effects. Experiment terminated after 30 days.
5 (M)				27.4 (M)	24.0 (M)	In males, tail blackened and sloughed off.
5 (F)	5.0	3.8	30	20.0 (F)	20.0 (F)	Two animals died 10 days after termination of experiment.
5 (M)				36.5 (M)	26.5 (M)	Animals became ill 3 days after beginning of feeding. Fur was ruffled, back hunched, great loss in weight and gastrointest-
5 (F)	10.0	8.2	10.7	32.6 (F)	25.8 (F)	inal disturbance, hyper-irritation, muscular twitching just before death.
6 (M)				37.0 (M)	25.0 (M)	
7 (F)	15.0	9.3	7.6	35.6 (F)	23.0 (F)	
5 (M)				28.7 (M)	32.5 (M)	
5 (F)	0	0	30	26.5 (F)	29.4 (F)	

Approved for publication by the director of the Wyoming Agriculture Experiment Station.

Research chemist (Beath); and associate research pharmacologist (Rosenfeld), Agriculture Experiment Station, University of Wyoming, Laramie.

^aSupplied by Eli Lilly and Co. to D. W. O'Day, dean, College of Pharmacy. We appreciate their cooperation.

ergotized food was weighed and the amount of ergot consumed by the animals was calculated on this basis. Some waste of food occurred, especially in the earlier part of the experiment.

Male and female Rockland mice were used as experimental animals for ergot feeding. The animals were weighed at the beginning of the experiment and three times a week thereafter. Animals receiving only Purina dog chow served as controls. Weights of control animals were taken at weekly intervals. All experiments were terminated at the

These experiments were carried out during the winter months (1947). Our animal house had no thermostatic temperature control. Occasionally, the temperature varied from 55 to 92 F. As these changes occurred, many (about 75%) of the animals that were on the 10 and 15 per cent ergot ration were found dead. We have repeated the experiment several times, turning off the heat when it was cold outside or turning it on when it was warm and, invariably,

TABLE 2—Relation of Weight and Age of Experimental Animals to Crude Ergot Poisoning*

Animals (No.)	Age (Mo.)	Initial weight (Gm.)	Final weight (Gm.)	Ergot total per animals (Gm.)	Consumed per animal/day (Gm.)	Duration of life (days)	Remarks
9	4	19.3	12.7	1.77	0.26	6.6	Animals weighed less than 20 Gm.
20	4	23.5	16.8	1.85	0.21	8.8	Animals weighed more than 20 Gm.
14	12	34.5	24.3	1.8	0.20	9.0	Animals were 12 months or older.

*The feed contained 10 per cent ergot.

end of thirty days and records of the animals were kept for an additional fifteen days.

For studies on the influence of age and weight, the mice were selected and grouped so that the difference in the actual ages of the animals was not more than ± 6 days and the weights ± 2 Gm.

Adult female mice were used for breeding. Each animal had one or two litters previously and raised its young successfully. Pregnant mice were fed with ergot not less than fifteen days, and not later than nineteen days after mating.

RESULTS

Results of various concentrations of ergot feeding are given in table 1. These results indicate that if the feed contained 2 per cent ergot, and the animals were on this ration for thirty successive days, the ergot produced no toxic effects. The animals gained weight during the experiment and the percentage of gain was the same in the ergot group as in the controls. Loss in weight was observed when the ergot concentration was increased to 5 per cent. The tails of two males in this group showed late gangrenous changes and eventually the tails sloughed off. No deaths occurred during the thirty days of feeding with 5 per cent ergot; however, 2 animals died ten days after feeding was discontinued. As the concentration in the feed was increased to 10 and 15 per cent, the animals began to show the toxic effect of ergot at the end of the third day. The fur was ruffled, back hunched, and the food intake decreased. There was a rapid loss in weight which continued until death. The animals which were fed with 10 per cent ergot lived an average of ten days and those given 15 per cent lived about nine days.

death of the animals resulted if they remained at a low temperature. However, if the animals were removed to room temperature, several of the comatose animals from each group recovered. The controls and the breeding stock were kept in the same room and they were not affected by these temperature changes. This would indicate that ergot affected the animals in such a way that they were unable to adjust their internal temperature when changes in environmental temperature occurred.

During the experiments, we used animals which showed considerable variations in age and weight. It is a well-established fact that younger animals are more susceptible to many toxic agents than are older ones. Therefore, we attempted to determine if such differences existed in ergot poisoning. Table 2 gives the results obtained. It is evident from the data that regardless of weight or age of the animals, if the intake of ergot was above 0.2 Gm. per day, the animals died within a short time. However, animals that weighed more, lived a few days longer, due to their lower daily ergot intake. Mice 4 months old are mature animals; whether animals 1 or 2 months of age showed more sensitivity to ergot poisoning could not be stated from these results.

Ergot and ergot alkaloids are recognized oxytocic drugs, that is, they stimulate uterine motility. We have attempted to study the effect of ergot on the later period of gestation and its effect on the young. Various concentrations of ergot were given at one, two, three, and five successive days to pregnant animals. Table 3 gives the results obtained. If the food contained 5

per cent ergot, and the animals received a single feeding, neither the mothers nor the young showed any toxic effects of ergot. However, if the feeding was continued for three days, the litters were born alive but all newborn animals died within two to three days. Feeding of 10 per cent ergot for one day had no effect on the mother, but only 5 of the newly born mice survived. The rest of the litters died at various intervals. As we increased the concentration of ergot and the number of days of ergot feeding, there was a corresponding increase in the loss of the litters and mothers. If the concentration of the ergot was increased to 40 per cent and feeding was continued several days, all the pregnant animals died without delivering the litters.

DISCUSSION

Our studies indicate that ergot, in addition to its usual pharmacologic action, has a multitude of other effects on the animals. In general, we have observed that the vitality of the young was reduced when the mothers received ergot in the ration. Nordskog and Clark² observed agalactia in sows and reduced vitality in the young after ergot feeding. In rats, they observed some milk production in the mothers but the young died at various intervals. They concluded that there was insufficient nourishment for the young. We have observed that the gastrointestinal tract of the young (which died after birth) contained some milk. From this observation, we concluded that death was not due to lack of nourishment but rather to the toxic effect of ergot.

The effect of ergot on the internal temperature-regulating mechanism of animals presents an interesting phenomenon. It is known that ergot can produce vascular dam-

age and subsequent gangrene of extremities. Whether the inability of the animals to adjust to the external temperature changes was due to the vascular damage or to the damage to the hypothalamus can not be determined without further study of this phase of ergot poisoning. It has been proved conclusively that the hypothalamus is essential to the temperature regulation of animals. Buchanon and Hill³ found correlation in young rats between the myelin density of the hypothalamus and ability of the animals to regulate their internal temperature when exposed to cold. Similar studies with ergot may give further information on the factor or factors responsible for the loss of internal temperature control of ergotized animals.

The rapid loss of weight observed in most cases was caused by the lower food intake and to the diarrhea which the animals developed after three to four days on the ergot ration. Fitzhugh *et al.*⁴ fed powdered crude ergot at 1, 2, and 5 per cent concentrations with low and high protein rations. They observed that with adequate rations, the growth rate, except those of the female rats on 1 per cent ergot, was significantly lowered. In our data, we did not find significant differences between males and females as to loss of weight or the toxicity of ergot, with the exception of the development of gangrenous tails in the males during the feeding of 5 per cent ergot.

There was no significant difference between young mice (4 months old) or adult (12 months old) as to the duration of life if the animals' diet included 10 per cent ergot. The daily feed intake was lower in the animals which weighed more than 20 Gm. than those which weighed less. However, at the time of death, the total ergot intake

TABLE 3.—Effect of Crude Ergot on Pregnancy

Animals in feed (No.)	Ergot (%)	Period of gestation ergot-feeding begun	Days ergot given (No.)	Litters living	Litters dead	Effect of ergot on mother
9	5.0	18-19 days	1 day	All.	0	No effect.
5	5.0	16-17 days	3 days	All living at birth.	All died in 2 or 3 days.	No effect.
5	10.0	18-19 days	1 day	All living at birth. 5 lived.	Rest of the litter died.	No effect.
3	15.0	18-19 days	1 day	All living at birth.	Died soon after birth.	No effect.
3	20.0	18-19 days	1 day	Born alive.	Died soon after birth.	No effect.
2	20.0	18-19 days	2 days	Born alive.	Died soon after birth.	No effect.
5	20.0	15-16 days	5 days	Several litters dead at birth.	All died soon after birth.	2 lived; 3 died 2 days after birth.
5	40.0	15-16 days	5 days			Pregnant animals died within 3 to 5 days.

was approximately the same in all groups.

The effect of ergot in high concentration on pregnant animals can be fatal if the feeding is continued several days in the latter stages of pregnancy. High concentration of ergot alkaloids causes firm contractions of the uterus which may hinder delivery and compress and asphyxiate the fetus and rupture the uterus, according to Sollman.⁵ Although we have observed no ruptured uterus after feeding 40 per cent ergot for three to five days, the pregnant animals died without discharging the young. These and many other factors must be considered when ergotized feed is utilized.

SUMMARY

1) Mice fed for thirty days with feed containing 2 per cent of ergot showed no toxic effects. If the concentration of ergot was increased to 5 per cent, the animals lost weight and several males developed gangrenous tails.

2) Rapid loss in weight and death of the animals occurred when the concentration of ergot was increased to 10 and 15 per cent.

3) Ergot feeding affected the internal heat-regulatory mechanism of the animals, since increase or decrease in the environmental temperature caused the death of the ergotized animals.

4) Age and weight of animals had no influence on the toxic effects of ergot.

5) Single feeding of ergot to pregnant mice lowered the vitality of the young but did not affect the mothers. Higher concentration and increase in the number of days of ergot feeding increased the death not only among the young but also among the mothers.

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Sows confined on cement may develop sore hoofs and a lameness resembling erysipelas. The lameness soon disappears if the hoofs are trimmed and the sows are removed to soft ground.—A. G. Krause, D.V.M., Iowa.

Nutritional Diseases of Australian Sheep

Deficiencies of cobalt and copper exist but are overcome by top-dressing pastures. The latter is said to be relieved by the feeding or pasturing on subterranean clover. This may be due to the extremely low molybdenum content of the subterranean clover, since it has been demonstrated that the copper/molybdenum ratio is an important factor in these deficiencies.

Copper poisoning or toxic jaundice is an important problem and has been reported more frequently when sheep are pasturing on *Heliotropium europaeum*.

Deficiencies of calcium and vitamin D have been reported but are not a serious problem. Phosphorus deficiency has not been recognized. Fluorosis, affecting the teeth of sheep, has been seen in those areas of Australia where artesian wells supply the water. Pregnancy toxemia and hypocalcemia are reported and sometimes are confused.

An interesting condition is an estrogenic disturbance which frequently results in infertility in sheep that pasture on subterranean clover. This clover usually is not as palatable as grass, so that the sheep eat the grass first and then are reduced to a diet of pure clover. In ewes so pastured, the lamb crop may be greatly reduced, although the rams apparently remain normal.

Poisonous plants of many kinds are recognized but none of them have assumed exceptional importance. A condition called "bent leg" in lambs has been noticed. The forelegs show a marked outward and forward curvature in the region of the carpus. The cause of the condition is unknown, but it has been determined that it is not rachitic.

A number of sheep diseases which appear commonly in the United States have not been reported from Australia. Included in this list are the following: progressive pneumonia, Johne's disease, *Pasteurella* mastitis, lip-and-leg ulceration, venereal balanoposthitis, dysentery of newborn lambs, necrobacillosis of liver from navel infection, goiter of newborn lambs, muscular dystrophy of young lambs.—*Hadleigh Marsh, D.V.M., Montana Agricultural and Experiment Station, Bozeman. Dr. Marsh visited Australia in 1948-1949.*

Where a good program of sanitation is carried out and the source of contamination is reduced, the immunity created by calf-hood vaccination may last throughout life.—*Ann. Rep., Ontario Vet. Coll., 1948-49.*

EDITORIAL

The Problem of DP Veterinarians

Since the status of foreign veterinary graduates immigrating to the United States was first discussed in these columns two years ago ("Accreditation Status of Foreign Veterinary Colleges," JOURNAL, Feb., 1948: 159-160), the placement of immigrant graduates in the various fields of medicine has become a more serious problem and more general throughout the country. Primarily, it is a problem of displaced persons or refugees from several European countries who are, in a rather real sense, casualties of World War II and who have sought entry into the United States under the displaced persons immigration law enacted in 1948.

The causes of the present situation are not hard to find. In the beginning, much of the attention and most of the sponsorship for displaced persons entering the United States under the law were directed to the unskilled and semiskilled, since these comprised the greatest number to be processed. This meant that the better trained persons, including professional graduates, were being left behind. Although the International Refugee Organization had records on some thousands of persons in technical and professional categories, together with the number rated as specialists in each classification, it was not until mid-1949 that the magnitude and complexity of clearing and placing these would-be immigrants was fully realized. For example, the IRO office in Geneva, just prior to August, 1949, compiled a list of over 23,000 "occupational skills" of refugees covering all European zones. This list covered some 30 categories, from accountants and agronomists to veterinarians and writers, and gave the number in each field.

Referring only to those in major medical pursuits, there were 252 veterinarians, 539 dentists, 563 graduate nurses, 1,400 practical nurses, and 1,723 physicians and surgeons. In addition, there were a few thousand "technically trained specialists" whom IRO had not yet classified. In all, it was reported that there were about 25,000 "accredited" DP technicians seeking relocation and placement.

It appears that the major agencies concerned with resettlement of displaced European professionals did not, at first, fully

understand or thoroughly investigate the legal difficulties and other problems such as citizenship, orientation, retraining, and language, which refugee professionals would face in qualifying for practice or other professional employment after entering this country. Thus, the requirements of veterinary practice acts relating to candidates having credentials from approved schools cannot be waived or set aside without danger of nullifying the whole system of licensure that has existed for many years as a protection to the public. This is so, regardless of the natural desire of agencies in this country that foreign graduates be given an opportunity to qualify, if they can, as professional men and earn a livelihood as such.

The real situation was recognized less than a year ago when the Emergency Council for Displaced European Professionals undertook to solve a problem which had become critical, and sought the cooperation of professional organizations in developing a formula in each particular profession whereby these displaced people could be placed as expeditiously as possible.

The AVMA had foreseen the problem to some extent and obtained such information as it could through its Council on Education on foreign veterinary colleges. Although incomplete at best on many schools and almost entirely lacking on others, the information was assembled and supplied to all veterinary medical examining boards for reference. During the past year, much more detailed information has been obtained through various sources on a number of foreign veterinary colleges and this is now being studied by members of the Council on Education. With the data now available, but in the absence of actual inspections of the schools, the Council may be able to issue, in the near future, a limited list of foreign veterinary colleges which seem to have standards, facilities, and curriculums reasonably comparable to the accredited schools in the United States and Canada.

Unfortunately for those most concerned, many of the displaced veterinarians who have come to this country are graduates of schools whose prewar standing was not well known and about which reliable postwar

information is difficult or impossible to obtain. Under the circumstances, it is readily understood why state examining boards are either unable or reluctant to accept the diplomas and other credentials of foreign veterinary graduates who apply for examination and licensure. Recently, a mimeographed statement titled "The Status of Foreign Veterinary Graduates Immigrating to the United States" was prepared by the AVMA office to help answer the many letters from foreign veterinarians and from state boards. Communications from a number of these examining bodies indicate the need for a thorough appraisal of the problem of DP veterinarians. It has been suggested that a conference be held and include representatives of the state veterinary medical examining boards, the veterinary deans, the Council on Education, the federal and state livestock sanitary officials, and others. The agenda of such a conference should include discussion of the licensure situation; the appraisal of available knowledge about foreign schools; the need for, and availability of, retraining and refresher courses in American veterinary colleges; the possibilities of employment of foreign graduates in meat and poultry inspection, tuberculosis and brucellosis testing and other disease control programs, and similar activities where, in recent years and because of a shortage of graduate veterinarians, the use of laymen has either been proposed or actually put into effect to some extent. There is a moral and professional obligation to explore all aspects of the foreign graduate problem and to determine how their professional skills can best be utilized. The proposed conference may be held during the AVMA convention in Miami Beach next August and, if so, will be announced to all interested persons and agencies.

Resolution on Nuclear Energy

The Public Health Veterinarians met in connection with the Seventy-Seventh Annual Meeting of the American Public Health Association in New York City and adopted the following resolution pertaining to the training of veterinarians in the medical and biologic aspects of nuclear energy.

WHEREAS, this group has deemed it essential that a representative cross section of interested civilian veterinarians obtain basic indoctrination in the medical and biological aspects of nuclear energy; therefore be it

RESOLVED, That it would be in the best interest of national security and public health if a

substantial quota of civilian veterinarians could attend the special courses on nuclear energy and radiological defense which are conducted by the Armed Forces and the Public Health Service.

Resolution on Lay Participation in Tuberculosis and Brucellosis Control Programs

The Vermont Veterinary Medical Association, meeting in Bradford on Dec. 16, 1949, adopted the following resolution.

BE IT RESOLVED, That this Association goes on record, considering the benefits and the best interests of the entire livestock industry, as opposing the incorporation of lay testing in our tuberculosis and brucellosis control programs.

BE IT FURTHER RESOLVED, That in support of our voiced position we pledge to cooperate in the execution and application of the tests on an efficiently organized, economically sound and professional basis.

BE IT FURTHER RESOLVED, That a copy of this resolution be sent by our secretary to the proper regulatory officials.

Curriculum Changes Suggested

In order to improve the veterinarians' understanding of the ways in which veterinary medicine can serve public health programs, it has been suggested that the curriculum be so adjusted that students of veterinary medicine would be introduced to veterinary public health early in the course, and that they would then continue their studies with a full appreciation of the appropriate associations and with the ability to make proper appraisals of the place which they should occupy as practitioners.

In the past, instruction in public health has been delayed until the senior year, and often until the last quarter of the senior year so that students had little opportunity to properly orient themselves with regard to the connection between clinical medicine and public health programs. S/L. R. Davenport, D.V.M., Illinois.

The veterinarians' first responsibility in all programs for control and eradication of infectious diseases is the protection of the healthy animals and the clean herds. For each dollar spent and each hour devoted to such efforts, the returns will be greater than in the care and treatment of ailing animals.

The veterinarian is the guarantor of the world's food supply.—D. C. Wood, D.V.M., Indiana.

CURRENT LITERATURE

ABSTRACTS

Infectious Keratitis of Cattle

Because cultures of *Hemophilus bovis* (Baldwin) did not produce keratitis in 34 head of cattle exposed to them, the authors conclude that this organism is a secondary invader.

Symptomatic treatment is recommended, the isolation of the actively infected animal in a darkened, fly-proof stall being more effective than medicinal treatment. Of the latter, sulfa-urea powder dusted over the eye shows encouraging results and is easier to use than sulfathiazole ointment.—[Herman Farley, I. O. Kliever, C. C. Pearson, and L. E. Foote: *Infectious Keratitis of Cattle—A Preliminary Report. Am. J. Vet. Res.*, 11, (Jan. 1950): 17-21.]

Transmission of Anaplasmosis

One of the extraordinary features of anaplasmosis is the readiness with which it has been transmitted mechanically by various types of surgical instruments, and mechanically and biologically by various types of arthropods. In male ticks, the etiologic agent can be conserved for relatively long periods, and in female ticks it can pass transovarially from adult to larva and through the various developmental stages from larva to imago.

The insects experimentally determined as potential vectors of anaplasmosis act like needles, lancets, and other surgical instruments, only as mechanical transfer agents, with no conservation of developmental stages of the etiologic agent of the disease taking place within them. In this respect, they differ markedly from the insect vectors of malaria, filariasis, onchocerciasis, and trypanosomiasis, in which definite developmental stages of the causative organisms of these diseases do occur.—[G. Dikmans: *The Transmission of Anaplasmosis. Am. J. Vet. Res.*, 11, (Jan. 1950): 5-16.]

Sodium Fluoride, Ascaricide for Horses

When fed at the rate of 2.5 Gm./100 lb. of body weight, sodium fluoride was effective in expelling 99.8 per cent of ascarids from the small intestines of 10 horses. Immature and mature ascarids were equally susceptible. No effort was made to record efficiency of the drug against tapeworms, pinworms, strongyles, or cylicostomes. Bots in the stomach were not affected.

Sodium fluoride was fairly well tolerated by the test horses. It caused moderate-to-severe diarrhea, moderate gastritis and enteritis, hemoconcentration,

leucocytosis, and hemolysis; but recovery was complete in seventy-two hours.—[A. C. Todd, G. W. Kelley, and M. F. Hansen: *Critical Tests with Sodium Fluoride as an Anthelmintic for Ascariasis in Horses. Am. J. Vet. Res.*, 11, (Jan. 1950): 26-28.]

Hemolytic Icterus in Foals

Withholding their dams' milk from potentially icteric foals, until the mares have been hand milked at hourly intervals for thirty-six hours, prevented the onset of hemolytic icterus. This was effective because a newborn foal loses the ability to absorb antibodies from its stomach when 24 to 36 hours old.

Treatment of cases which did occur consisted of removing the foal from its dam, transfusing it with blood from a compatible donor, and returning it to the dam after forty-eight hours.—[D. W. Bruner, E. R. Doll, F. E. Hull, and Alice S. Kincaid: *Further Studies on Hemolytic Icterus in Foals. Am. J. Vet. Res.*, 11, (Jan. 1950): 22-25.]

Trichomoniasis Control Program

After many years of study, a program is presented to practitioners as one which will rid herds of dairy and beef cattle of trichomoniasis. It should be instituted as soon as presence of *Trichomonas foetus* has been positively established, and each of the eight steps listed must be rigidly followed and methodically carried out. [See JOURNAL, 114, (May, 1949): 293-305.]

This program has been used in nine infected herds under the care of the authors, and in eight of them trichomoniasis has been completely eliminated and they have remained free from the disease. The failure is believed to be the result of improperly carrying out the prescribed procedures or of re-introduction of new infection from a neighboring herd.—[D. E. Bartlett and G. Dikmans: *Field Studies on Bovine Venereal Trichomoniasis. Effects on Herds and Efficacy of Certain Practices in Control. Am. J. Vet. Res.*, 10, (Jan., 1949): 29-39.]

Neuropathology of Hog Cholera

Neuropathologic examination supplemented gross, microscopic, and bacteriologic examination of 124 diseased and normal specimens over a period of eleven years. Of 31 uncomplicated hog-cholera specimens, the gray and white matter of the brain of 28 of them showed vascular and perivascular in-

filtrates, microgliosis, capillary hemorrhages, and leptomeningeal infiltrates. These mesodermal changes indicate a nonsuppurative encephalitis. Similar lesions were found in 12 of 13 hog-cholera cases complicated by salmonellosis, pasteurellosis, and other bacteriologic infections.

On the other hand, 45 cases of noninfectious and infectious disorders (other than hog cholera) yielded only 4 cases which showed isolated, barely recognizable, vascular infiltrates of no diagnostic importance.

On the basis of these findings, neuropathologic examination is regarded as a valuable aid in the differential diagnosis of porcine diseases.—[C. F. Helmboldt and E. L. Jungherr: *The Neuropathologic Diagnosis of Hog Cholera*. *Am. J. Vet. Res.*, 11, (Jan. 1950): 41-49.]

Brucellosis in Bulls

Of 394 bulls examined, 56 (14.7%) gave a positive agglutination reaction in the blood serum and in the sperm plasma. *Brucella* organisms were demonstrated in the semen of 15 of these bulls by culture and by guinea pig inoculation. In only 5 of these bulls was it not possible to determine the presence of infection by the morbid condition of the sperm. In general, the 30 bulls which showed a positive agglutination reaction in the sperm plasma also had a high blood reaction. Upon slaughter and culture of the organs, infection has been found in the vesicular gland, the ampulla of the ductus deferens, the testis, and the epididymis. In no animal was infection found in the prostate or the bulbo-urethral gland.

The authors believe that *Brucella* organisms may be eliminated in the semen during a period of several weeks. This will be during a period of acute inflammation and, as the condition becomes chronic, the bacterial elimination is diminished.—[H. C. Bendixen and Eric Blom: *Investigations on Brucellosis in the Bovine Male, with Special Regard to the Spread of the Disease by Artificial Insemination—Summary in English*. *Maanedsskr. Dyrl.*, 59, (1947): 61-140.]

Plate Test for Avian Pneumoencephalitis

A plate hemagglutination-inhibition test for avian pneumoencephalitis (Newcastle disease) has been developed to obviate the time required for laboratory diagnosis by the older methods. The results secured with this test have agreed with the tube serum dilution test in 93 per cent of the cases. The results could be read in one hour after drawing the blood in most instances.

Red blood cells are obtained by drawing 10 cc. of chicken blood by cardiac puncture in a sterile tube. The cells are then centrifuged and washed. On a ruled plate mirror, 0.1 cc. of unknown serum is mixed with 0.05 cc. of known Newcastle virus and immediately 0.1 cc. of a 1% per cent red cell suspension is added and mixed as before. The

reading can be made as soon as the known positive and known negative control serums are readable, which is usually within three to five minutes. By this method, it is possible to test 60 to 72 unknown serum samples in an hour.—[R. E. Lugibuhl and E. Jungherr: *A Plate Hemagglutination-Inhibition Test for Newcastle Disease Antibodies in Avian and Human Serums*. *Poult. Sci.*, 28, (1949): 622-624.]

Animal Poisons

The author points out that carloads of fertilizers, insecticides, and other poisons are spread every year on fields and plantations and the percentage of animals suffering from poisoning is much greater than is usually supposed. He maintains that, in the last decade, more than one-fourth of the pigs, sheep, and goats that died or had to be slaughtered on account of illness were poisoned in some way. He recommends systematic instruction of agricultural people to make them more poison-conscious.—[Reich: *Unlocked Poison Cabinets*. *Tierärztl. Umschau*, 3, 4, (1949): 33-35]—F. A. Tonn.

Osteomalacia and Osteoporosis

The author is a roentgenologist in the city hospital at Worms and he reports the impressive increase in the number of cases of osteomalacia and osteoporosis in adult human beings which has occurred since 1939. A similar increase has also been found in domestic animals. A clinical picture of these known conditions is best shown in x-ray pictures.—[H. G. Schmitt: *On Calcipriva Osteopathy of Domestic Animals*. *Tierärztl. Umschau*, 3, 4, (1949): 40-43.]—F. A. Tonn.

Paratyphoid Abortion in Sheep

Observations are reported on two outbreaks in Russia of a disease characterized by late abortions, diarrhea, and deaths in sheep of all ages. The pathology in ewes, yearlings, and rams was that of a septicemia, with degeneration of the parenchymatous organs and muscles. There was a severe metritis in ewes. Lambs were affected with respiratory symptoms in the first to fifteenth days after birth and died in one to four days. Autopsy revealed a spleen enlarged to five times normal, and inflammation of the lungs.

No chemotherapy or serum treatment was effective in lambs. Metritis in ewes was treated by subcutaneous injections of prostigmine.

An organism classified as *Bacillus* (*Salmonella*) *paratyphi abortus ovis* was cultured from the organs of 16 lambs, 30 of the 30 sheep examined, and from 27 aborted fetuses. It was impossible to culture the organism from all aborted fetuses and sheep dead of the disease, despite characteristic pathology. No attempt was made to produce the disease with an ultrafiltrate. It was transmitted to rabbits and sheep by injection of organ suspensions and cultures.

Agglutination tests were not reliable for diagnosis in individual sheep, but were considered valuable in flock diagnosis. Of 67 aborting ewes, 48 reacted positively in titers of 1:50 to 1:1,600. Of 46 sheep from a healthy flock, 3 reacted, all at 1:50. A few sheep gave simultaneous reactions in low titers to Brucella antigen.

It was recommended that Russian diagnostic laboratories examine aborted ovine fetuses for paratyphoid as well as brucellosis, and that they conduct paratyphoid agglutination tests.—[E. S. Orlov: *On Paratyphoid Abortion in Sheep. Veterinariya*, 26, (Nov., 1949): 17-21]—R.E.H.

BOOKS AND REPORTS

Textbook of Meat Inspection

This 659-page book by an English Veterinarian is apparently designed to discuss all phases of the meat industry. The scope of the book is indicated by the first chapter which is a description and evaluation of meat animals and the last chapter which discusses fish inspection. Almost all of the meat processing procedures described are patterned after operations in Great Britain, Europe, South America, and Australia. The procedures in North America vary considerably from those employed in the countries mentioned; therefore, it is indeed unfortunate if the author did not have an opportunity to visit North American slaughtering establishments before writing this book. However, due to its size and scope of the subjects discussed, it will no doubt be of value as a reference to those closely associated with meat inspection.

The first five chapters (Food Animals, Public Abattoirs and Methods of Slaughter, Post-mortem Inspection, Comparative Anatomy of Tissues and Organs, and Pathology of the Food Animals), together with the last five chapters (Treatment and Disposal of By-Products and Fats, The Preservation of Food, Inspection of Rabbits, Inspection of Poultry, and Inspection of Fish) add very little to our present knowledge regarding the proper conduct of meat inspection. Fortunately, the above mentioned chapters constitute less than half of the text so that the remaining chapters (Affections of specific Parts, Bacterial Diseases of the Food Animals, Parasitic Diseases of the Food Animals, and Bacteriology of Meat) are especially valuable, and are an improvement over what has been previously available on these subjects.

There are many fine illustrations, including some excellent color plates. The lengthy discussion of some diseases, such as tuberculosis and trichinosis will be considered desirable by some American readers. Others will feel that too much space was devoted to these conditions.

It is doubtful if this book will be widely adopted as a textbook for meat-inspection courses for students of veterinary medicine. However, all veterinarians who are interested in the pathology of food-producing animals, or in an activity closely

associated with the meat industry will certainly want this book for their library.—[*Textbook of Meat Inspection*. By Horace Thornton, England. Cloth. 659 pages. Illustrated. Alexander Eger, Inc., 21 E. Van Buren St., Chicago, Ill. Price \$12.50.]—H. E. KINGMAN, JR.

Cats and Man

Here is a book treating at length the ancestry of the domestic cat and its admiration by historical figures (authors, artists, statesmen, scientists) and emphasizing again that many people do not like cats because here is one household pet that annoys its keeper by not completely surrendering its independence. Sympathetic as the veterinarian may be toward his feline patients, the cat stands apart from the pets routinely handled because of being supple, quick, less yielding, and apt with its claws and teeth when molested. The purring cat of the home takes on the behavior of a wild beast under forcible restraint. Its satisfactory handling is delicate and difficult.

Professional details are not touched and, though the book throughout is a plea in favor of cats, the resentment and handling of them is left to good judgement. The main theme is the cat's place in the sun throughout the ages. A top fighter of pestiferous rodents and an agreeable commensal in the parlor and nursery is a rich enough combination to shape the attitude of the competent veterinarian.—[*Les Chats et les Hommes (Cats and Man)*. By Dr. Maurice Rabat. 191 pages. Fasquelle, Paris, 1949.]

Public Health Practices for Veterinarians

The complete proceedings of the Institute on Public Health Practices for Veterinarians held by the State of Illinois Department of Public Health, March 21-23, 1949, in Springfield, Ill. are included in this book which also presents the complete papers of all of the speakers on the Institute Program. Abstracts of these papers were presented in the JOURNAL (November, 1949).—[*Public Health Practices for Veterinarians*. Illinois Department of Public Health. Paper. 80 pages. Available from the State Department of Public Health, Springfield.]

Manures and Fertilizers

The Food and Agriculture Organization of the United Nations has published a leaflet entitled the *Efficient Use of Fertilizers*. It emphasizes that efficiency is possible only when there has been soil analysis, crop rotation, erosion control, irrigation, drainage, liming, and other practices which become a part of a balanced farm operation. The efficient use of fertilizers involves the use of animal manure. Chemical fertilizers alone are not efficient.—[*Efficient Use of Fertilizers*. Edited by Dr. Vladimir Ignatieff. 183 pages. International Document Service, Columbia University Press, 2960 Broadway, New York 27, New York. Price \$2.00.]

Brucellosis

The author draws on his personal experience with more than 700 cases to conclude that, in its manifestations "brucellosis can resemble almost any other clinical entity and its diagnosis and treatment offer many problems."

The book consists of ten chapters, of which nine are devoted to strictly human phases of the problem. It is addressed chiefly to the general practitioner of medicine in the belief that no test, except culture of *Brucella*, has been devised which supplants clinical skill and judgement.

The author presents a documented case for the correction of such oft-expressed ideas as: "Brucellosis really is a rare disease." "Brucellosis is dying out as a result of almost universal pasteurization of milk." "Brucellosis is a self-limiting disease." "There is no treatment for brucellosis even if it is diagnosed."

Treatment is discussed in detail, but attention is called to the avalanche of reports of newly discovered disease entities and of new therapeutic agencies, which too often "fade from medical consciousness when exposed to the white light of objective critical analysis."

Veterinarians will be interested in the book because it deals with a disease transmitted from animals to man. No new information is presented in the chapter on prophylaxis—pasteurization, blood testing, whey testing, early detection in animals, control methods for cattle and swine. The medicolegal aspects do provide some very pertinent ideas, and the bibliography of 742 items offers a ready file of supplementary material.—[*Brucellosis*. By H. J. Harris, M.D. 2nd ed. Cloth. 617 pages. Illustrated. Paul B. Hoeber, Inc., Medical Book Department of Harper and Brothers, 49 East 33rd St., New York 16, N.Y. Price \$10.00.]

The Great Dane

This book could touch off a bull market in Great Dane stock if the breed were being traded on the securities exchanges. The author—a kennel owner, exhibitor, and show judge—writes with such enthusiasm on this Apollo of dogdom that the breed is certain to win many new admirers. The text covers origin, history, and development of the breed, its traits and abilities, official standards, what to look for when buying puppies, ear cropping, feeding, show ring considerations, breeding, training, housing, diseases, kennel management, legal aspects of dog ownership, and shipping, with each subject suitably and sometimes cleverly illustrated.

Several inaccuracies, questionable statements, and hasty discussions of involved subjects outweigh the good points of the chapter on diseases. Veterinarians will appreciate the author's advice that "It is nothing other than fair play both to the dog and the doctor to bring your ailing dog in good time to the veterinarian rather than hold off until the condition of the dog is such that

even the best professional skill cannot save him." On the other hand, many professional readers will censure the writer for not leaving the age for distemper immunization to the judgment of the individual veterinarian, rather than arbitrarily setting the age at "about three months." No doubt, also, the statement that rabies "is so rare that it can be considered the rare exception" will draw fire from rabies control authorities, in view of the thousands of cases diagnosed in dogs each year. The muddled treatise on "running fits or canine hysteria" is cause for wishing that this section had been omitted.

Veterinarians desiring to add to their knowledge of the breeds will find this book entertaining and instructive, but, after reading it, many of them will be tempted to send the author a list of references on dog diseases, to save her from stubbing her toes on this subject if and when she writes another book.—[*The Great Dane*. By Virginia Keckler. Cloth. 139 pages. 137 illustrations. Judy Publishing Company, Chicago 16, Ill. 1949. Price \$3.00.]

Louis Pasteur, Free Lance of Science

This book is much more than a biography of Louis Pasteur, extensive as such a document could be. In the 14 chapters, the author has incorporated a chronological story of the life and work of Pasteur. This covers the family life, which is a revealing story in itself, but more especially the scientific problems which he studied and solved.

In this age of specialization, it is almost unbelievable that one man could have made important contributions in so many, and such widely-separated, fields. Beginning with a study of crystal formation and its relationship to molecular asymmetry, Pasteur worked extensively in the study of fermentation and its effect upon wine and beer, on the value of heating fluids and foods (pasteurization) to preserve the quality and flavor. Then he delved into the hotly-debated subject of spontaneous generation, and in the diseases and ailments of silkworms before approaching the problems of animal disease for which all veterinarians know and respect him.

Anaerobic life became a prelude to the study of anthrax and the development of an effective vaccine. Few of us stop to realize that this involved formulation of a theory of immunization. Simultaneously, he also studied gangrene, septicemia, childbirth fever, and fowl cholera. Later, his monumental work with rabies and the development of an entirely different type of vaccine than that used in anthrax added to his scientific stature. Before his death, in 1895, he also studied bovine pleuropneumonia and swine erysipelas.

All of this the book reviews, but the author (the discoverer of tyrothricin and gramicidin) has accomplished much more. In recounting the pageant of discoveries of the nineteenth century, which revolutionized life and created an atmosphere of faith in science because they bridged the

gap between theory and experiment, he has managed to weave in the thread of development of the biological sciences. While the legend of Pasteur is being told, it is abundantly clear that a mere recital of his scientific achievements would give but a feeble idea of the intensity and fullness of his life. He was, in effect, an apostle and a crusader. He is remembered more as a champion of a cause than as an intellectual giant. At no time has the author lost sight of the fact that theoretic problems and findings are interesting, but they become increasingly important as practical applications are found.

A book to be read and reread by everyone interested in the science of life—and aren't we all? —[*Louis Pasteur, Free Lance of Science*. By Rene J. Dubos. Cloth. 418 pages. Illustrated. Little, Brown & Co., 34 Beacon St., Boston, Mass. 1950. Price \$5.00.]

Received But Not Reviewed

Cattle Grubs Must Go. National Livestock Loss Prevention Board, Livestock Exchange Bldg., Chicago 9, Ill. 24 pp.

Beef Cattle Housing Requirements. New Jersey Agricultural Experiment Station, New Brunswick, N. J. 24 pp.

Feeding Poultry. Circular 528, New Jersey Agricultural Experiment Station, New Brunswick, N. J. 4 pp.

Control of Parasites and Diseases of Sheep. Circular C-152, Oklahoma Agricultural Experiment Station, Stillwater, Okla. 16 pp.

REVIEWS OF VETERINARY MEDICAL FILMS

Producers of motion pictures considered to be directly or indirectly related to veterinary medicine are invited to submit pictures to the AVMA Motion Picture Library for review. Reviews of pictures considered by the reviewers to be of interest to veterinarians, and students in colleges of veterinary medicine, or suitable for use by veterinarians for showing to lay audiences, will be published in the JOURNAL. Reviews will give credit to the producer and director and will specify under what circumstances and from whom the film is available.—The Editors.

Local Anesthesia in the Canine.—Silent, 16 mm., color, well titled; running time eleven minutes. Prepared by the Department of Small Animal Surgery and Medicine, Alabama Polytechnic Institute, Auburn, Ala. Procurable from the AVMA Motion Picture Library, 600 S. Michigan Ave., Chicago 5, Ill. Rental price: \$2.50 plus shipping charges.

This film, made available to the AVMA for reprinting through the courtesy of Dr. J. E. Greene, depicts the site for injecting local anesthetics on the skeleton and the live dog. Techniques depicted are epidural anesthesia and blocking of the maxillary, mandibular, infraorbital, and mental nerves. The areas anesthetized are demonstrated

on the live dog. Through the use of colored anesthetic agents and an autopsy of the dog used for demonstrating the injections, the infiltrated areas are clearly demonstrated. This film should be of great interest to veterinarians and to veterinary students. The manner in which the subject is presented and the photography are both excellent. • • •

Canine Clinical Cases.—Silent, 16 mm., color, titled; showing time thirteen minutes. Prepared and photographed by the Department of Small Animal Surgery and Medicine, Alabama Polytechnic Institute, Auburn, Ala. Procurable from the AVMA Motion Picture Library, 600 S. Michigan Ave., Chicago 5, Ill. Rental price: \$2.50 plus shipping charges.

A series of clinical cases is depicted in this film. The photography is excellent and the choice of cases is good. The film would be better if the treatment and the prognosis of some of the cases were shown. The cases described are keratoma, emphysema, rickets, laceration of pharynx, leucemia, sinusitis, and severe laceration of lower lip. They are interestingly presented, and where the treatment is shown along with the recovery they are especially good. The autopsy of the leucemia case is well photographed and adds much to the picture. This film is probably most valuable for the instruction of veterinary students, for which it was designed, but will also be worthwhile for showing at meetings of veterinarians. • • •

Gelfoam in Surgery.—Sound, 16 mm., color; showing time twenty-eight minutes. Produced by Audio Productions Inc., New York, N. Y. Procurable for meetings of students in schools of veterinary medicine and veterinarians (not suitable for lay audiences) from The Upjohn Co., Kalamazoo, Mich.

This is an excellently prepared picture with exceptional photography. Although designed primarily for surgeons of human medicine, it will be of almost equal interest to veterinarians. There is a brief review of the blood-clotting mechanism, materials that have been used to aid clot formation, and a description of the production of "gelfoam," which is derived from gelatin but is extremely porous and resilient. Experimental work with animals reveals its absorptibility through the use of photomicrographs. The surgical indications in human beings are shown and it is here that the photography excels. Students in their last two years in colleges of veterinary medicine, and all graduate veterinarians, will find this an excellent and interesting film. • • •

Energy Release from Food.—Sound, 16 mm., color; showing time twenty-nine minutes. Produced by Audio Productions Inc., New York, N. Y. Procurable from The Upjohn Company, Kalamazoo, Mich.

This film shows, by animated diagrams, the role of nicotinic acid, thiamine, and riboflavin in carbohydrate metabolism. Attention is focused on the nutritive processes which furnish energy for

bodily functions. Diagrams and the animated drawings cleverly demonstrate the role of the B vitamins. A portion of the film is devoted to certain clinical conditions in human beings characterized by a deficiency of B vitamins. Parts of the picture will be readily understandable to veterinary students and veterinarians. Other portions will be rather difficult to comprehend. It will be of more interest to students while studying advanced chemistry than to practitioners. The photography and animated drawings are excellent and present the subject matter clearly.

• • •
Sheep Scab.—Silent, 16 mm., color, titled; showing time twelve minutes. Prepared and photographed by Dr. E. E. Leasure, School of Veterinary Medicine, Kansas State College, Manhattan, Kan. Procurable from the AVMA Motion Picture Library, 600 S. Michigan Ave., Chicago, Ill. Rental price: \$2.50 plus shipping charges.

This picture depicts the cause of sheep scab and symptoms in severely affected flocks. Pictures include the extreme loss of wool and evidence of the itching and irritation caused by the mite infestation. Treatment by dipping is depicted and the progress of treated cases following dipping and shearing is shown. There is also some good photomicrography of the mite. All of the photography is good and the subject is interestingly presented. Of interest to graduates and students of veterinary medicine and suitable for showing to lay audiences.

• • •
Bovine (Allergic) Dermatitis.—Silent, 16 mm., black and white, titled; showing time fifteen minutes. Prepared by the Veterinary Division of Kansas State College, Manhattan, Kan. Procurable from the AVMA Motion Picture Library, 600 S. Michigan Ave., Chicago 5, Ill. Rental price: \$3.00 plus shipping charges.

This film, made in 1935-1937, presents severe cases of dermatitis in cattle observed in those years in Kansas and other Middlewest areas. The exact cause is not known but the only conditions common to all cases were wheat pasture and sunlight.

Even though this picture was made ten to fifteen years ago, it is still of interest to veterinarians and veterinary students because the condition undoubtedly still occurs or will occur again. There are good pictures of the cases and the lesions. Some of the cases, in various stages of recovery, show the recuperative progress that occurred despite the severity of symptoms.

• • •
Prevention of Rabies in Man and Animals.—Silent, 16 mm., black and white, well titled; running time fifteen minutes. Produced by, and procurable from, Pitman-Moore Co., Indianapolis 6, Ind.

If there were a newer film available depicting rabies in animals and man it would not be necessary to review this film. However, as far as is known, this is the only film that shows symptoms of rabies in the dog, cow, pig, and child. It also

refers to an outbreak in a community in Massachusetts, shows Negri bodies, describes treatment in human beings and animals, and portrays the production of vaccine. There is a trailer that was apparently added to the film, which is approved by the American College of Surgeons, that depicts the symptoms of rabies in a child. Fortunately, the symptoms shown are not as horrible as might be expected and therefore does not entirely limit this film for showing to professional audiences. The photography is not good, or the film is so old that it is dark, but until there is a newer film that presents all of the facts of rabies shown in this film, it is still valuable.

• • •
Where Chick Life Begins.—Silent, 16 mm., color, titled; running time thirty minutes. Produced at Cornell University, Ithaca, N. Y., under the personal direction of Prof. Alexis L. Romanoff in cooperation with the Purina Mills Research Division. Available from Public Relations Division, Ralston Purina Co., St. Louis 2, Mo.

The daily development of the chicken embryo was photographed through the shell, through a window in the shell, and outside of the shell. These excellent pictures of the embryonic development of the chick constitute most of this film. The identification of the embryonic structures is sketchy and would need some elaboration for most audiences but, with additional explanation, this film should be valuable for teaching purposes. It will be of some interest to veterinarians as a short review of embryology. It will merely be of interest to laymen, as there is little they will thoroughly understand. Of course, the excellent photography throughout, and scenes such as the chick breaking and emerging from the shell will be appreciated by all viewers. A short trailer attached to the portion of the film showing the embryonic development discusses the importance of good equipment, proper temperature and humidity, and adequate nutrition of the layers upon the hatchability of eggs.

• • •
Partners.—Sound, 16 mm., color; showing time approximately thirty minutes. A Jam Handy picture produced for Ralston Purina Co., and procurable from the Public Relations Division of Ralston Purina Co., St. Louis 2, Mo.

The historic friendship of people for their dogs is well presented in this film. Most of the purposes for which dogs are used and the reasons for the companionship between dogs and their masters are depicted. There are excellent pictures of greyhound racing, bench shows, field trials, actual bird hunting, retrieving of waterfowl, fox hunting, sheep herding, and a narrative about the drama of coon hunting. The importance of the veterinarian in the maintenance of dog health is mentioned. A tribute is paid to the trainers, handlers, and breeders of dogs. There is also a short discussion of the importance of good breeding, training, and adequate nutrition. It is a thoroughly enjoyable picture that is suitable for any audience.

THE NEWS

Eighty-Seventh Annual Meeting Miami Beach—August 21-24, 1950

AVMA Convention City—A Million See It Every Year

August 21-24, 1950, will mark the first AVMA annual meeting ever held in Florida. And with headquarters at famed Miami Beach, it promises to be one of the most colorful and most enjoyable conventions yet held.

This city, comfortably air-conditioned throughout the year by inland and ocean waters, entertains more than a million visitors annually. Though ranking only eighth in size among Florida cities, it has one-fourth of all the hotel rooms in the state. To be exact, Miami Beach has 25,000 rooms

in 361 hotels, plus 15,000 units in 1,400 apartment buildings. The city itself was founded just thirty-five years ago, and the great majority of its buildings are less than fifteen years old.

Weather bureau records attest to the city's claim of having one of the finest, most equable year-around climates to be found anywhere. The average winter temperature is 68.2 degrees. The average for summer is 81.2 degrees. Snow and ice are unknown. On the other hand, it is rare for the thermometer to rise to 90 degrees in sum-



—Miami Beach News Bureau

Eight miles of ocean beach on which to play or relax and view the passing scene at Miami Beach, the 1950 AVMA convention city, Aug 21-24.

mer, although cities many hundreds of miles to the north may be sweltering in heat around the 100-degree mark.

Convention visitors will find plenty to see and do in their spare hours. Eight miles of ocean beaches form the city's eastern shore, nearly 2 miles of which is reserved in public parks for the use of all. Lifeguards are on duty throughout daylight hours to assist swimmers who get into trouble. Swank hotels and cabana colonies have their own beaches as well as swimming pools.

In the parks, visitors will find tennis courts, shuffleboard, and other recreational facilities for both young and old. During summer, the city maintains a day-long program for children, including handicrafts, story hours, and even classes in Spanish.

Two 18-hole golf courses, Bayshore and Normandy Isle, are operated by the city and are open to the public. Both have complete clubhouse facilities and are considered among the most attractive in the country. Golf and tennis, like

swimming, sunbathing, boating, and other sports, may be enjoyed throughout the summer in Miami Beach.

Few places in the world can compare with the Miami Beach area in the variety of game fish that may be taken in any given day. Just offshore, in the waters of the Gulf Stream, are such prizes as sailfish, marlin, Allison tuna, kingfish, wahoo, dolphin, and bonito. In the bays and inlets, anglers catch tarpon, bonefish, and snook, wading if they want to forego the use of a boat. Inland, the black bass is king of the fresh waters, as elsewhere in Florida.

Visitors to the AVMA convention will find a fleet of sports cruisers based at Miami Beach and catering to fishing parties. Each cruiser furnishes bait and tackle, carries up to six in a party, and may be engaged for half a day to a week or longer. Larger boats are available for drift fishing over the reefs, where grouper, jack, snapper, and other varieties abound.

Preconvention and Postconvention Tours Arranged

Final plans are now being shaped for an official AVMA Preconvention Tour that will take members, their families, and guests on a sight-seeing trip through famous vacationlands. Other tour plans, to be announced in detail in the May JOURNAL, are being made for a postconvention trip to Havana, where the AVMA party will be guests of the Cuban government and the national association of veterinarians.

Tour party members will board reserved Pullman cars in or near their home cities and, depending upon where they live, will join the preconvention trip at either of two main converging points: Washington, D. C., or Jacksonville, Fla.

If You Go via Washington, Here Is What You Will See

Washington is celebrating its Sesquicentennial this year. You will arrive there on the morning of Thursday, August 17, and will visit these places:

- U. S. Capitol, Congressional Library
- Pan American Union, Smithsonian Institute
- Mount Vernon, Bureau of Engraving and Printing
- Arlington National Cemetery

The trip to Mount Vernon will follow the new George Washington Memorial Highway along the Potomac, via Alexandria, Va., and there will be time to go through the Mount Vernon home and gardens before returning to Washington.

You will leave Washington by train at 7:05 p.m., Thursday, August 17, and will arrive in Jacksonville, Fla., at 8:45 the next morning ready to start the sight-seeing trip through Florida.

The Itinerary from Jacksonville to Miami Beach

Air-conditioned Greyhound buses will be chartered for the entire AVMA party between Jacksonville and Miami Beach, since it is not practical to visit the main places of interest when traveling by train. However, return transportation at the close of the convention—from Miami to your home city—will be entirely by train, unless you desire to make other arrangements. Official tour arrangements do not include any sight-seeing stops on the return trip.

Following is the complete Florida itinerary:

Friday, Aug. 18.—Leave Jacksonville at 10:00 a.m., arriving in St. Augustine before noon to visit the Fountain of Youth, the Old Slave Market, Oldest House in America, a historic lighthouse, and the famous Spanish Fort.

Leave St. Augustine at noon and arrive at Marineland in time for luncheon at the Dolphin Restaurant on the Atlantic, followed by a visit to the Oceanarium where sharks, giant turtles, and multicolored tropical fish can be seen. Watching a dolphin stand on its tail to be fed is another feature of the trip to Marineland.

Leaving Marineland at 2:00, the group then goes to Daytona Beach for a trip through this famous resort, with the buses driving over the race course made famous by such speedsters as Malcolm Campbell. From here, the route turns inland through miles of citrus groves, and the AVMA party arrives at Ocala at 5:00 for dinner and an overnight stay at the Marion Hotel.

Saturday, Aug. 19.—Leave Ocala at 8:30 a.m., arriving at Silver Springs—one of Florida's outstanding scenic attractions—at 8:45 a.m. High-

light of this stop will be a ride in glass-bottomed boats that allow a view of caverns, underwater rainbows, and strangely carved grottoes inhabited by many species of marine life.

Leaving Silver Springs at 10:00 a.m., the tour will reach Tampa in time for luncheon at the Floridan Hotel. The rest of the afternoon will be spent on a sight-seeing trip of Tampa, Ybor City, and St. Petersburg, after which the group will return to Tampa for dinner at the Spanish Columbian restaurant and an overnight stay at the Floridan Hotel.

Sunday, Aug. 20.—Leaving Tampa at 9:00 a.m. enroute through the Highland section—covered as far as the eye can see by orange, lemon, lime, and grapefruit groves—the first stop will be the beautiful Cypress Gardens, scene of many movies and newsreels. Later in the morning, stops will be made at the Bok Tower and Bird Sanctuary, followed by luncheon at Lake Wales.

The afternoon trip moves around Lake Okeechobee through the farming and cattle-raising country of southern Florida. Turning eastward to the coast, the route leads through Palm Beach, Fort Lauderdale, Hollywood Beach, and Miami—and over the causeway to Miami Beach, arriving at 5:30 p.m. Then, get

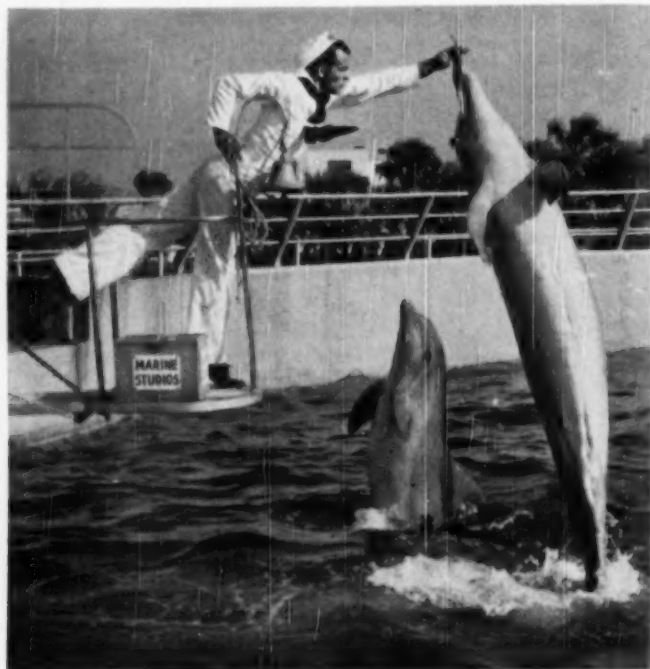
ready to enjoy four days of convention activity planned by the Committee on Local Arrangements and the Committee on Program—and be sure that you've allowed yourself time after the close of the meeting to go on the AVMA official tour to Havana. (Cuban tour information will be published in the May JOURNAL.)

How the Preconvention Tour Will Be Organized

The section of the tour that takes the AVMA party to Washington, D. C., for a daytime sight-seeing trip before leaving for Florida, is planned primarily for those from the West and Midwest who may not otherwise have an opportunity to visit the national capital during the Sesquicentennial this year.

It is not expected that tour party members from California and the Southwest and from southern states will want to make the trip to Washington (although they are welcome, by all means); instead, plans call for them to travel directly from their home cities to Jacksonville, Fla., where tour party members from all parts of North America will converge the morning of Friday, August 18, for the start of a sight-seeing journey through Florida, terminating in Miami Beach.

Members in New York and other eastern



A dolphin stands on its tail to be fed at Marineland, Fla., one of the stopping places on the AVMA preconvention Florida tour. Marineland lies between St. Augustine and Daytona Beach and is famous for its oceanarium, where visitors may view sharks, giant turtles, and multicolored tropical fish as they live in the depths of the sea.

—Marine Studios

states may tour Washington if they desire; those not wishing to do so will leave New York City just in time to join the Washington tour group departing for Jacksonville.

Management and Financial Side of the Tours

The 1950 preconvention and postconvention tours are being planned with the same attention to travel comfort and diversified sight-seeing that made the 1948 San Francisco trip so memorably successful. Happiness Tours of Chicago, which supervised the 1948 plans, will again handle all arrangements, in cooperation with the Association's central office.

In arranging for these tours, as well as for hotel reservations in Miami Beach, the AVMA is acting entirely in the interest of its members. It receives no "kick-back" from any travel agency or transportation company. Any economies that may accrue through large-scale bookings are passed along to members in the form of lowest possible rates.

Rates for the Florida and Havana trips will be announced as soon as figures are available.

Miami Beach Hotel Reservations

Complete information about Miami Beach hotel accommodations will appear in the May JOURNAL. The Committee on Local Arrangements is prepared to supply ample and excellent hotel accommodations for everyone attending the meeting. However, members of the tour party may, if they request, have Happiness Tours of Chicago arrange hotel reservations for their stay in Miami Beach.

Miami Beach Program Progress

The program committee for the annual AVMA Convention consists of the chairman

and secretary of each section. Representing the six sections this year are:

General Practice, Drs. Ronald Jackson and J. L. Hopping; Public Health, Drs. L. E. Starr and J. E. Scatterday; Research, Drs. C. C. Morrill and C. A. Manthei; Small animals, Drs. C. E. Bild and M. M. Leonard; Poultry, Drs. C. H. Cunningham and C. W. Barber; Surgery and Obstetrics, Drs. E. A. Davis and J. F. Hokanson.

The executive secretary of the AVMA is ex officio chairman of the program committee, and Dr. J. G. Hardenbergh has asked Dr. R. C. Klusendorf to act for him in this capacity.

These officers have worked diligently and have contacted many outstanding leaders in allied professions in addition to our own members. As soon as the speakers selected have chosen their subjects, this information will be published. The program differs from those of former years by having only one general session, the opening session. As the tentative, condensed program illustrates, this allows extra time for recreation, sight-seeing, and meetings of related groups.

Preconvention Sessions

<i>Thursday, August 17</i>	<i>Sunday, August 20</i>
p.m.—Committee on Budget	a.m.—House of Representatives, first session
p.m.—Board of Governors	Auxiliary Executive Board
<i>Friday, August 18</i>	Registration Opens
a.m.—Board of Governors	p.m.—House of Representatives, final session
p.m.—Executive Board	Evening—Open
<i>Saturday, August 19</i>	
a.m. and p.m.—Executive Board	

Condensed Tentative Program Schedule

	MONDAY August 21	TUESDAY August 22	WEDNESDAY August 23	THURSDAY August 24
A.M.	Registration Exhibits open Opening Session Addresses; Awards; Nomination of Officers.	3 Section Meetings: General Practice; Public Health; Research.	3 Section Meetings: Small Animals; Surgery and Obstetrics; Poultry. Women's Breakfast 9:30 a.m. followed by Annual Meeting of Auxiliary.	1 Section Meetings: Small Animals; Surgery and Obstetrics; Poultry.
P.M.	3 Section Meetings: General Practice; Public Health; Research. Women's Auxiliary House of Representatives, 1:30-3:30 p.m. Women's Tea, 4:00 p.m.	No scientific program. Open for scheduled entertainment. Meetings of related groups.		Installation of Officers Adjournment
Night	Open for dinners and meetings of related groups.		President's Reception, 9:00 p.m.—Dance, 10:00 p.m.	

Educational Exhibits

The program committee has also stimulated additional interest in educational exhibits, and the following are definitely scheduled:

The Food of Horse Strongyles, by N. D. Levine, Ph.D., University of Illinois.

Hyperkeratosis in Cattle, by C. S. Roberts, D.V.M. Alabama Polytechnic Institute.

Anaplasmosis Control, by H. Farley, D.V.M. Oklahoma A. & M. College.

Poisonous Plants of the Southeastern States, by Henry Ward, Ph.D., Alabama Polytechnic Institute.

Parasite Control in Horses, by F. E. Hull, D.V.M. University of Kentucky.

Cattle Nematodes, by R. L. Mayhew, D.V.M. Louisiana State University.

Creeping Eruption or Larva Migrans, by Alan Donaldson, Ph.D., Communicable Disease Center, Atlanta, Ga.

Rabies, by L. E. Starr, A. L. Stafford, and J. E. Scatterday, Georgia State Board of Health and Florida State Board of Health.

Curare in Veterinary Medicine, by L. M. Jones, D.V.M., Iowa State College.

Brucellosis, by J. H. Steele, D.V.M., U. S. Public Health Service, Atlanta, Ga.

Additional exhibits are being planned.

Credit Requirements in Veterinary Medicine

The compilation of preprofessional requirements for admission to all of the schools of veterinary medicine in the United States was prepared by Dr. R. E. Rebrassier, secretary of the College of Veterinary Medicine, The Ohio State University, Columbus; the deans of each school verified the requirements.

"This is the first time, to my knowledge, that a composite compilation has been made of our preprofessional requirements," says Dr. Rebrassier, "and it may lead to some serious thinking as to more uniformity in these requirements."

Physical education and military science requirements have not been computed in any of the colleges of veterinary medicine.

Preprofessional Requirements in Veterinary Medicine

	Alabama	California	Colorado	Georgia *Free choice	Illinois *Must elect 9 hours foreign language	Iowa *Free choice	Kansas *Or genetics	Michigan *Or elective	Minnesota	Missouri *In agriculture	New York	Ohio *Free choice	Oklahoma *Free choice except min. math.	Pennsylvania *Free choice except min. math.	Texas	Tennessee	Washington *Free choice	
English	10	9	9	15	9	9	10	9	12	9	9	9	9	9	12	18	9	...
Chemistry ¹ (general, inorganic, qualitative)	10	15	15	10	12	12	15	9	12	7	12	15	12	9	12	12	15	Not necessarily all three
Chemistry ¹ (organic, quantitative, physiological)	5	5	10	5	15	8	7	*9	13	5	6	6	15	6	12	5	6	Not necessarily all three
Mathematics	10	5	5	5	5	...	...	6	5	5	...	*10	...	...	9	...	*5	...
Physics	5	9	5	5	15	8	*10	9	8	...	9	*10	12	9	12	9	*5	...
Botany	10	...	5	10	5	3	...	3	3	...	...	...	6	6	6	3	...	...
Bacteriology	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...
Embryology	...	...	...	...	...	...	6	...	...	...	...	...	...	...	...	...	...	...
Entomology	...	...	...	...	...	...	...	...	...	4	...	...	...	...	5	...	...	...
Soils	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	...	...	...
Field crops	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	...	...	...
Medical vocabulary	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Humanities and social sciences	10	30	31	5	*24	3	24	27	...	15	...	20	9	9	10	...	36	...
Zoology ¹ (general, genetic)	10	15	10	10	7	11	7	15	10	7	9	15	18	9	9	18	12	Not necessarily both
Animal husbandry	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dairy husbandry	15	...	...	15	...	12	5	5	15	22	...	15	...	...	14	8	...	One or more of group
Poultry husbandry	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dairy technology	...	...	...	*10	...	*24	12	...	10-15	*9	45	...	*12	*33	...	17	...	...
Electives	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total hours (quarter credit hours)	90	88	90	90	92	90	96	92	93	91	90	90	93	90	101	90	89	...

May 1 Is Deadline for Humane Act Award Nominations

The Humane Act Award Committee has set May 1 as the latest date it will accept nominations from veterinarians and the public for the 1950 award.

This award is made each year, at the opening session of the AVMA convention, to a boy or girl not over 18 years old who has performed an exceptionally kind deed for animals.

Selection is made by the committee from written nominations submitted by the general public, humane and youth organizations, and veterinarians. The winner receives a \$100 U.S. savings bond and a framed certificate.

Dr. R. J. Garbutt, chairman of the committee, points out that the award has attracted increasing attention every year since it was first given in 1944, and he urges veterinarians to take an active part in submitting entries.

The act of kindness may be a rescue, some sort of project for the benefit of animals, or a written work. Among winners in recent years were a boy who built a bumper device to protect his blind dog, a girl who captured a rabid dog, and a boy who originated National Cat Week.

Nominations may be sent either to AVMA headquarters, 600 S. Michigan Ave., Chicago 5, Ill., or to Dr. R. J. Garbutt, 367 E. 62nd St., New York 21, N. Y.

The AAHA Meeting

The American Animal Hospital Association will hold its annual meeting in Denver on April 23-27 at the Shirley Savoy and Brown Palace hotels.

Dr. Lloyd Moss, in charge of the program, has assembled a series of speakers and subjects, so varied and valuable that they will attract everyone. Dr. B. S. Burkhardt, chairman of the committee on local arrangements, has provided adequate and excellent quarters for all of the meetings scheduled and for members attending the annual meeting.

Dr. B. S. Burkhardt will preside at the Tuesday morning (April 25) session, when Governor Lee Knous will welcome the AAHA, Dr. Charles Bower will respond, and Dr. J. Stuart Crawford will deliver his presidential address. Presentation of the Moss essay award will be made by Dr. W. G. Magrane.

The Tuesday afternoon session will be devoted to a discussion of hospital records and management. The remainder of the scientific program covers problems in surgery, laboratory aids to diagnosis, and will be climaxed by Dr. C. P. Zepp, Sr., AVMA president, speaking on "The AVMA and the AAHA."

The president's reception will be held on Wednesday evening at the Brown Palace, and installation of officers will take place on Thursday afternoon.

The women's program will include a tea on Monday afternoon, joining with the men in the evening for the social session, "welcome to Denver." A luncheon on Tuesday, a motor trip to the Rockies on Wednesday, and the president's reception concludes their activities.

Monday, April 24, is scheduled to be a busy day, comprising a golf tournament, executive board and committee meetings, membership business meeting, a stag dinner for members, and illustrated lecture by Dr. L. H. LaFond on "Your Hospital in Review," and the day concluding with the social session "welcome to Denver."

S/WAYNE H. RISER, Executive Secretary.

STUDENT CHAPTER ACTIVITIES

Alabama Chapter.—Officers who served the Alabama Student Chapter during the first semester of the 1949-1950 school year were Tom Maddox, president-elect; David Stone, vice-president; Curtis R. Fincher, secretary; James Neal, treasurer; Spencer McMaster, senior representative; Russell Laster, junior representative; Howard Acree, sophomore representative; Bob Mullins, freshman representative; and Dr. W. J. Gibbons, faculty advisor.

Dr. B. T. Simms spoke on "The Veterinary Profession" at the Oct. 4, 1949, meeting, which recorded an attendance of 227. On Oct. 18, four seniors reported on their summer internship.

Dr. W. J. Gibbons reported on the Florida State Veterinary Medical Association meeting at the November 1 meeting and one senior reported on his summer internship. Dr. C. P. Zepp, Sr., president of the AVMA, addressed the chapter at the November 9 meeting. The last two meetings in November were business meetings.

Dr. W. M. Coffee, La Center, Ky., gave an illustrated talk on general practice at the December 15 meeting, and Dr. Rhealing, Alabama State toxicologist discussed "Toxicology as Related to Veterinary Medicine." A film on gaited horses was shown on Jan. 31, 1950, and Dr. Gibbons reported on the Kansas State meeting and showed a film on small animal surgery at the February 7 meeting.

Officers for the new semester are Curtis R. Fincher, president-elect; Ned Prickett, vice-president; Charlie Ogletree, secretary; and William Dantzler, treasurer.

The total membership of the Chapter is 255.

S/CURTIS R. FINCHER, Secretary.

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Kansas Chapter.—Meetings of the Kansas State Student Chapter of the AVMA were held the first and third Tuesdays of each month during the first semester. At each meeting, seniors told of experiences of their summer "internship."

Dean E. E. Leasure, on October 4, gave a

brief history of the Borden Award and presented this year's award to senior Wm. Gross. Dr. F. B. Jones, chief, Kansas Bureau of Animal Industry, Topeka, presented an illustrated talk on "Breeds of Horses." On October 8, Dr. Guhl, of the Kansas State faculty, discussed, with illustrations, "Peck Order of Hens."

At the November meetings, Mr. T. O'Boyle discussed football, and Dr. Frank Jordan, Abilene, gave some helpful hints on "General Practice."

Dr. Charles W. Bower, Topeka, discussed "Problems of a Small Animal Practice," and Dr. M. L. Morris, New Brunswick, N. J., spoke on "Animal Nutrition" at the December 6 meeting. On December 8, the Women's Auxiliary to the Kansas State Student Chapter and their husbands were guests of Dr. and Mrs. W. R. Frank at the country club. Dr. Frank is a faculty member.

Officers of the Chapter are Charles Hunter, president; Harvey Arand, vice-president; John Gamby, treasurer; and Ross Mosier, secretary.

S/M. D. SUTTER, *Publicity Chairman.*

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Missouri Chapter.—The Veterinary Club of the University of Missouri held its regular meeting Feb. 13, 1950, in the auditorium of the veterinary hospital and clinic.

Dr. W. P. Johnson, Slater, spoke about some of the common swine diseases in his general practice, with emphasis on the differentiation of hog cholera and swine erysipelas. Dr. H. P. Callaway, Waverly, discussed his personal experience with the shipping fever complex of feeder cattle. An interesting question and answer period followed his presentation.

S/THOMAS D. O'BRIEN, *Secretary.*

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Washington Chapter.—Officers elected at the Jan. 16, 1950, meeting of the Washington State Student Chapter of the AVMA are Philip Morgan, vice-president; Charles Childs, secretary; Russell Strandberg, treasurer; John Schmidt, publicity chairman, and John Pickrell, athletic chairman.

President Wedam introduced Dr. M. O. Barnes who told of his experiences in Mexico with foot-and-mouth disease. The motion pictures "Veterinary Service with Military Animals" and "Training War Dogs" were shown.

S/RAY REDISKE, *Secretary.*

Washington Chapter.—At the Feb. 8, 1950, meeting of the Washington State Student Chapter of the AVMA, the films "Hypodermic Syringes and Needles, Their Care and Function" and "Metabolism of Carbohydrates Within the Cell" were shown.

President Wedam appointed Clark Huitt, Chad Coleman, Ray Reed, and Dale Smith as a committee to work on the annual open house.

S/CHARLES E. CHILDS, *Secretary.*

WOMEN'S AUXILIARY

Mrs. C. L. Miller, Secretary.—With the increased membership and the expanding activities of the Women's Auxiliary, it was deemed advisable to separate the office of secretary-treasurer, and the new constitution adopted July, 1949, by the general assembly of the Auxiliary, provides for a secretary and a treas-



Mrs. C. L. Miller

urer. Even with the duties somewhat lightened from what they have been in former years, the work involved in being secretary of the Auxiliary is considerable. The secretary is responsible for the business office of the Auxiliary, including all dues and membership records. She collects the dues, sending receipts, and forwards dues to the treasurer. She conducts the correspondence, and the number of letters written may depend upon what is required of her by the president. The secretary is responsible for the minutes of the business meeting of the Auxiliary and for those of the Executive Board meetings. She also prepares the written annual report of the Executive Board action for submission to the House of Representatives and to the Auxiliary, as required in the auxiliary constitution.

Mrs. C. L. Miller, 348 Forest Ave., River Forest, Ill., has given generously of her time and talent

Are You Moving?

Notify the AVMA office of change of address before the 10th of the month; otherwise your succeeding Journal will not be delivered. The Journal is not forwardable under the mailing regulations.

during the past seven years, for she has served the Auxiliary as secretary-treasurer since 1942, and is now conscientiously carrying on with the duties of the secretary. Her membership in the Auxiliary of the AVMA dates back to 1934.

The following is a report made by Mrs. Miller, Feb. 8, 1950, of membership in the Auxiliary by states.

State	Members	State	Members
Alabama	15	Nebraska	24
Arizona	4	Nevada	1
Arkansas	5	New Hampshire	7
California	159	New Jersey	17
Colorado	7	New Mexico	31
Connecticut	11	New York	82
Delaware	3	North Carolina	17
District of Columbia	7	North Dakota	5
Florida	61	Ohio	103
Georgia	29	Oklahoma	19
Idaho	24	Oregon	14
Illinois	222	Pennsylvania	54
Indiana	82	Rhode Island	2
Iowa	62	South Carolina	16
Kansas	59	South Dakota	6
Kentucky	20	Tennessee	35
Louisiana	13	Texas	37
Maine	10	Utah	17
Maryland	16	Vermont	21
Massachusetts	17	Virginia	11
Michigan	53	Washington	55
Minnesota	21	West Virginia	21
Mississippi	10	Wisconsin	34
Missouri	47	Wyoming	21
Montana	None	Canada	17
		Puerto Rico	1
		Total	1,623

s/(MRS. V. H.) FLORENCE MILLER, *President*.

Illinois Auxiliary.—An attendance of 166 women was recorded during the eighth annual meeting of the Auxiliary to the Illinois Veterinary Medical Association. The activities of the meeting were characterized throughout by friendliness and informality.

For the first time, the women were invited to the Opening Session of the State Association, and the Auxiliary president, Mrs. C. H. Horstman, spoke briefly. Evidence of pride in this recognition of the Auxiliary was the nearly 100 per cent attendance of its members. Further recognition was accorded the Auxiliary when its president and vice-president were included in the Association's broadcast on the WLS Dinner Bell program Thursday noon.

The Hospitality Committee under the chairmanship of Mrs. E. E. Hollingshead, Peoria, provided a Canasta Clinic on Wednesday evening, which was attended by more than 100 women and men, and tours of interesting places.

Mrs. R. M. Carter and Mrs. A. G. Misener, wives of the officers of the State Association, poured at a tea following the Opening Session. Mrs. A. H. Gaffin of Clinton, chairman of the Tea Committee, welcomed the women to the meeting, and Mrs. L. A. Hill, Highland, responded for the members.

Special buses took 155 women to luncheon Thursday at the Peoria Country Club, made possible by the membership of Mrs. Paul Casey, Sr. Mrs. W. H. Timms, Macomb, and Mrs. C.

W. McLaughlin, Peoria, were in charge of the luncheon and transportation.

The annual business meeting was held in the Ballroom of the Country Club. Members voted to cooperate with the Junior Auxiliary at the University of Illinois to work out a project for the Junior Chapter of the AVMA. The program speaker was petite Dr. Sue Maxwell, associate professor of English at Bradley University, who delighted the women with some of Emily Kimbrough's experiences from "It Gives Me Great Pleasure."

A luncheon on Friday at the Pere Marquette Hotel closed the activities. The 105 women attending took part in the "Luncheon at the Pere" radio program.

Representatives of regional auxiliaries joined with retiring and incoming officers Friday morning to discuss policies and plans for the coming year. The officers for 1950 are Mrs. C. M. Rodgers, Blandinsville, president; Mrs. P. J. Meginnis, Cicero, vice-president; Mrs. L. E. Johnson, Rushville, secretary; and Mrs. Victor Beat, New Berlin, treasurer.

s/(MRS. C. M.) EDMAR RODGERS, *President*.

Kansas Auxiliary.—Mrs. R. W. Hayes, Herington, was elected president of the Women's Auxiliary to the Kansas Veterinary Medical Association at a brunch on Feb. 1 at the Jayhawk Hotel in Topeka. Other officers are Mrs. E. E. Leasure, Manhattan, vice-president; Mrs. Ray S. Pyles, Wichita, secretary-treasurer; and Mrs. E. L. Boley, Wichita, historian.

The auxiliary was entertained with a tea at the executive mansion, a brunch, and the annual banquet.

s/MRS. RAY S. PYLES, *Secretary*.

Michiana Auxiliary.—At the Feb. 9, 1950, meeting of the Michiana auxiliary, Mrs. Anthony E. Bott, Belleville, Ill., president of the International Auxiliary to the Veterinary Profession, gave an interesting talk about the part wives of veterinarians can and should play in their communities, as well as an account of her experiences while attending the International Congress in London last summer and her trip through other European countries.

Officers of the Michiana Auxiliary are Mrs. James Carver, Michigan City, Ind., president; Mrs. J. J. Fishler, Elkhart, Ind., vice-president; Mrs. George Freier, Benton Harbor, Mich., secretary; and Mrs. Maurice J. Court, Marcellus, Mich., treasurer.

s/MRS. R. W. WORLEY, *Publicity Chairman*.

Milwaukee Auxiliary.—Mrs. F. W. Milke, president, Women's Auxiliary of the Milwaukee Veterinary Medical Association, was in charge of local arrangements for the annual meeting of the Wisconsin State Auxiliary Jan. 12-13, 1950. The program included a luncheon and style

show by Hixon's in the Empire Room of the Schroeder Hotel; a visit to radio station WMAW, a tour of the city and tea at Watts' China and Glassware Shop, and the annual banquet. Mrs. Carl A. Brandly, Madison, president of the state auxiliary, presided over the business session.

s/Mrs. F. W. MILKE, *President*.

Nevada Auxiliary.—The Women's Auxiliary to the Nevada State Veterinary Association was organized in Reno on Feb. 13-14, 1950. Officers of the new organization are Mrs. Joe B. Key, Reno, president; Mrs. Alfred Bernkrant, Las Vegas, vice-president; Mrs. W. R. Sheff, Reno, secretary; and Mrs. W. F. Fisher, Reno, treasurer.

s/Mrs. W. R. SHEFF, *Secretary*.

New Jersey Auxiliary.—The Auxiliary to the New Jersey State Veterinary Medical Association met Feb. 2, at the hotel Hildebrecht, Trenton. About 75 members and guests attended the tea and fashion show. Wives of veterinarians and girls in the office of the Bureau of Animal Inspection acted as models. At the business meeting following the tea and fashion show, it was decided to repeat the luncheon and theater party at the summer meeting as the one held last year was a big success. It was also decided to change the By-Laws to authorize the president to send sympathy bouquets to families of deceased members.

s/(MRS. JAMES F.) VALETA M. SAVAGE, *Secretary*.

Virginia Auxiliary.—After the business meeting at the Hotel Jefferson, Richmond, Jan. 30, 1950, members of the Women's Auxiliary to the Virginia Veterinary Medical Association enjoyed a bingo party, a tea and fashion show, and the annual banquet.

Personal.—Mrs. V. H. Miller, Charleston, W. Va., president of the Women's Auxiliary to the AVMA, plans to attend the joint meeting of the North and South Carolina auxiliaries at Myrtle Beach, S. Car., on May 1-2, 1950.

APPLICATIONS

The listing of applicants conforms to the requirements of the administrative by-laws—Article X.

First Listing

ADLAM, GEORGE H.
c/o Dr. S. L. Catley, 109 17th Ave., W., Calgary, Alta.
D.V.M., Ontario Veterinary College, 1949.
Voucher: J. C. Wainwright.
ALEXANDER, SAM A.
320 E. Windsor St., Monroe, N. Car.
D.V.M., Ohio State University, 1916.
Voucher: J. H. Brown.
ASHTON, WILLARD H.
2035 First Ave., N., Payette, Idaho.

D.V.M., State College of Washington, 1942.
Voucher: A. P. Schneider.

BELMAR, HARRY B.
Box 284, Dothan, Ala.
D.V.M., Chicago Veterinary College, 1915.
Voucher: I. S. McAdory.

BERDAN, LEONARD N.
The Rocks, Schoharie, N. Y.
D.V.M., New York State Veterinary College, 1943.

Voucher: J. J. Regan.
GLOBUS, ROBERT
758 Boswell Ave., Norwich, Conn.
D.V.S., New York State Veterinary College, 1927.

Voucher: E. H. Patchen.
GREEN, JOE W.
Veterinary Science Dept., Purdue University, West Lafayette, Ind.

D.V.M., Texas A. & M. College, 1945.
Voucher: E. C. Cannon.

MYERS, FRED O.
526 S. 3rd St., Corvallis, Ore.
D.V.M., Colorado A. & M. College, 1924.
Voucher: R. H. Peterson.

SAVILLE, JOHN M.
Chauvin, Alta.
D.V.M., Ontario Veterinary College, 1949.
Voucher: J. C. Wainwright.

SEDLACEK, GLEN E.
506 Illinois St., Plainfield, Ill.
D.V.M., Iowa State College, 1944.
Voucher: A. G. Misener.

THOMPSON, ROY A.
218 Centennial Bldg., Springfield, Ill.
M.D.C., Chicago Veterinary College, 1910.
Voucher: A. G. Misener.

VAN AUDALL, C. A.
Edinburg, Ill.
D.V.M., Chicago Veterinary College, 1912.
Voucher: A. G. Misener.

VANDERBILT, WILLIAM H.
3207 Chapel Hill Rd., Durham, N. Car.
D.V.M., Kansas State College, 1941.
Voucher: J. H. Brown.

VICKERS, CECIL P.
P.O. Box 1207, Tallahassee, Fla.
D.V.M., Alabama Polytechnic Institute, 1937.
Voucher: V. L. Bruns.

Second Listing

APPLETON, WAYNE, Box 133, Ashland, Ill.
BUIRAGO G., EDUARDO, Lab. de Investigaciones Vet., Finca Nal., "La Aurora", Guatemala City, Guatemala.
BURSON, W. M., 245 Oakland Ave., Athens, Ga.
BUSH, THOMAS C., JR., 618 12th Ave., E., Cordele, Ga.
CHILDRESS, G. L., Roodhouse, Ill.
CRENSHAW, WALTER E., Rt. 2, Box 277 A, Westaco, Texas.
COURNOYER, LUCIEN, 5435 Bourbonniere St., Montreal 36, Que.

DAVISSON, LEE, State Veterinarian's Office, Room 720, State Office Bldg., Lansing 13, Mich.
 DINER, NEDIM, 3431 Walnut St., 3rd Rear, Philadelphia, Pa.
 DODD, PAUL S., 1210 N. Franklin St., Danville, Ill.
 EVENSON, GEORGE E., West Salem, Wis.
 FIEVET, CHARLES E., Box 41, Swainsboro, Ga.
 FLETCHER, P. C., Hotel Geneva, Geneva, Ill.
 GILLESPIE, ANDREW, 6031 Wentworth Ave., Chicago, Ill.
 HILL, CHARLES P., University of Georgia School of Veterinary Medicine, Athens, Ga.
 HUDSON, PERCY W., 2614 Napier Ave., Macon, Ga.
 JACOBSON, HARVEY W., Denmark, Wis.
 KASSIRER, A. L., 1569 Carling Ave., Ottawa, Ont.
 LOCKE, ALBERT H., Box 12, Magnolia, Del.
 McDERMID, JOSEPH E., 802 Worden Ave., E., Ladysmith, Wis.
 NELSON, MYRON A., Alden, Minn.
 OGILVIE, ROBERT A., 206 W. Main St., Mount Horeb, Wis.
 ROSS, T. C., Mc Rae, Ga.
 ROUKEMA, EDWARD C., 511 New Federal Bldg., Atlanta 3, Ga.
 SPIERS, P. M., Sandersville, Ga.
 TORNES, W. A., 4839 E. New York St., Indianapolis, Ind.
 WRIGHT, DONALD W., Westfield, Wis.

AMONG THE STATES AND PROVINCES

Alabama

State Association.—On Feb. 17-18, 1950, the Alabama State Veterinary Medical Association met in Dothan at the Houston Hotel for their annual meeting. After President Ray A. Ashwander's address, the following program was presented.

Mr. O. C. Medlock, Auburn: "Soil Conservation."

The following veterinarians participated in a small animal forum: Drs. L. E. Beckham, Tuscaloosa; and W. N. Konde, Auburn, moderators; C. Paul Vickers, Tallahassee, Fla.; C. E. Kennedy, Mobile; P. W. Tedder, Birmingham; L. E. Irby, Mobile; C. L. Holloway, Mobile; A. D. Sherrill, Tusculumbia; G. C. Kendall, Montgomery; R. O. Moore, Tuscaloosa; and Vernon Wells, Selma.

Dr. H. F. Findley, Atmore, was moderator of a swine forum. Other members were Drs. J. B. Taylor, Elba; J. W. Williams, Luverne; C. T. Chapman, Troy; J. M. Luke, Eufaula; W. A. Till, Luverne; W. H. Harrell, Enterprise; and R. A. Johnson, Andalusia.

The following participated in a bovine forum: Drs. M. L. Crawford, Marion; H. L. Farr, Tuscaloosa; J. H. Carter, Cullman; V. D. McCreary, Brewton; W. H. Hines, Monroe; J. E. Jordan, Aliceville; C. E. Deal, Fayette; Ray Dunlap, Guntersville; G. C.

Cloyd, Florence; and Joe Sledge, Greensboro. Dr. F. A. Clark, Auburn, discussed "Present Scope of Veterinary Public Health," and Dr. R. S. Sugg, Auburn, spoke on "The American Veterinary Medical Association."

s./I. S. McADORY, Secretary.

California

New Livestock and Poultry Pathology Laboratory.—On Jan. 6, 1950, the California Department of Agriculture opened its new \$200,000



Fig. 1—The Livestock and Poultry Pathology Laboratory at San Gabriel.

Livestock and Poultry Pathology Laboratory in San Gabriel. The laboratory building, designed specifically for diagnosing diseases of livestock and poultry, is considered one of the best of its kind in the United States.

Representing the California Department of Agriculture at the opening were Drs. C. U. Duckworth, assistant director; and A. K. Carr, chief of the Division of Animal Industry. Members of the Agricultural Department of the Los Angeles Chamber of Commerce, officials of the Poultrymen's Cooperative Association, State College of Agriculture, county agricultural com-



Fig. 2—Some of the veterinarians who attended the opening of the laboratory. Left to right—Drs. W. W. Worcester, Turlock; A. G. Boyd, Sacramento; R. T. Annereaux, Sacramento; P. D. DeLay, Sacramento; and E. E. Jones, San Gabriel.

missioners, Agricultural Extension Service, county and city governments, livestock and poultry industries, and public health officials were also represented at the opening of the laboratory.

The floor plan of the new building comprises 11,000 sq. ft. and includes business offices, office for the pathologist in charge, poultry and livestock autopsy rooms, media and sterilizing room, bacteriologic laboratory, serology room, conference room and library, office for field veterinarians, and various service rooms.

Dr. A. K. Carr, emphasized that the laboratory function is confined to the diagnosis of livestock and poultry diseases and is not intended for any private veterinary work.

s/E. E. JONES, *Veterinary Pathologist.*

Connecticut

State Association.—The annual meeting of the Connecticut Veterinary Medical Association was held at the Hotel Bond in Hartford on Feb. 1, 1950.

The following officers were elected for the ensuing year: Drs. Raymond E. Larson, Newington, president; Howard C. Raven, Bridgeport, first vice-president; William T. Leggett, Westport, second vice-president; and Dr. E. H. Patchen, Milford, secretary-treasurer.

Elected to the Board of Censors were Drs. C. P. Hines, Salisbury, chairman; John P. McIntosh, Kensington; George H. Ludins, Hartford; Chester E. Guthrie, Wilton; and Harmon C. Leonard, Cheshire. Dr. N. W. Pieper, Middletown, was elected resident secretary for the state.

The Executive Board consists of Drs. H. C. Raven, Bridgeport, chairman; R. E. Larson, Newington; R. T. Gilyard, Waterbury; J. A. Edgett, West Hartford; R. B. Church, Winsted; and E. H. Patchen, Milford, executive secretary.

The following were elected to membership in the association: Drs. Stewart E. Elting, Donald W. Gill, Ruth B. Strong, John H. Nickerson, Arthur Lipman, Edward F. Wallace, Paul Handler, Frank Ferrigno, and George W. Tyrrell.

s/E. H. PATCHEN, *Secretary.*

Idaho

New Association Organized.—On Feb. 2, 1950, 22 veterinarians met at the Rogers Hotel in Boise to organize the Eastern Idaho Veterinary Medical Association. Drs. T. R. Myers, veterinarian in charge, U. S. Bureau of Animal Industry, and Arthur P. Schneider, director, Idaho Bureau of Animal Industry, discussed state policies and federal-state cooperative programs on tuberculosis and brucellosis. A general discussion of problems peculiar to eastern Idaho, with emphasis on bacillary hemoglobinuria, completed the literary program.

Dr. J. S. Allen, Jr., Rigby, was elected president, and Dr. H. W. Sorensen, Blackfoot, secretary of the new association.

All but two of the veterinarians in the eastern Idaho area attended—a splendid response to the organization of a new association.

s/A. P. SCHNEIDER, *Director, Idaho B.A.I.*

Illinois

State Association.—The Hotel Pere Marquette, Peoria, was headquarters for the sixty-eighth annual convention of the Illinois State Veterinary Medical Association on Feb. 1-3, 1950. President R. M. Carter introduced guest speakers and presided over the scientific program which follows.

Dr. H. E. Kingman, Wyoming Hereford Ranch, Cheyenne: "The Relation of Endocrine Products to Reproduction" and "Beef Cattle Practice." Drs. Harry Caldwell, Paul Gambrel, and William Gay further discussed the paper on endocrine products.

Dr. J. H. Steele, chief, Veterinary Public Health Division, U. S. Public Health Service, Atlanta, Ga.: "The Role of the Veterinarian in Public Health."

Dr. N. R. Brewer, Department of Physiology, University of Chicago: "Hemorrhagic Disorders."

Dr. Jesse Sampson, University of Illinois College of Veterinary Medicine, Urbana: "The International Veterinary Congress" (with illustrations).

Dr. A. M. Orum, Carthage: "Can the Practitioner Afford to Participate in Brucellosis Control Work?"

Dr. J. R. Brown, Ottawa: "Brucellosis and Tuberculosis Control at the County Level."

Dr. Roy A. Thompson (M.D.C.), superintendent of livestock industry, Springfield: "Illinois Regulatory Measures."

Dr. D. R. Stephenson, Rockford: "Use of the Mobile Telephone in Veterinary Practice."

Dr. H. C. Smith, Allied Laboratories, Inc., Sioux City, Iowa: "Swine Erysipelas."

Dr. E. E. Sweebe, Abbott Laboratories, North Chicago: "Fluid Therapy in Small Animals."

Dr. Glen L. Dunlap, Ashe Lockhart, Inc., Kansas City, Mo.: "Treatment of Rabies-Exposed Animals."

Dr. C. C. Pfeiffer (M.D.), head, Department of Pharmacology, University of Illinois College of Medicine, Chicago: "The Testing and Use of Anti-Epileptic Drugs" and "Antihistamine Drugs" (both with illustrations).

Dr. Deets Pickett, Kansas City, Mo.: "Curare in Canine Surgery."

Dr. Walter Stevenson (M.D.), Quincy, president, The Illinois Medical Society: "Socialized Medicine."

Dr. E. P. Reineke, Department of Physiology, Michigan State College, East Lansing: "The Use of Thyroid and Antithyroid Compounds in Commercial Livestock."

Dr. Andrew L. MacNabb, principal, Ontario

Veterinary College, Guelph, Ontario: "The Veterinarian's Responsibility to His Community." Dr. MacNabb's paper was read by Dr. Frank C. Schofield.

Mr. Wm. Shaw, public relations counselor, Chicago: "Veterinary Public Relations."

Dr. Frank C. Tucker, Claypool, Ind.: "Poultry Practice."

Dr. Isaac E. Hayes, Waterloo, Iowa: "Equine Practice."

Dr. E. F. Saunders, chief, biological production, Jensen-Salsbery Laboratories, Kansas City, Mo.: "The Current Status of Hog Cholera Vaccines."

Dr. Frank C. Schofield, head, Department of Pathology, Ontario Veterinary College: "Report on Research in Rhinitis in Swine and Hemoglobinuria in Cattle" and "Hard Pad Disease."

Dr. Fred W. Milke, Milwaukee, Wis.: "Canine Obstetrics."

Dr. Wayne H. Riser was moderator of a panel discussion on "Canine Problems." Other panel members were Drs. Deets Pickett, Kansas City, Mo.; C. A. Henley, Jacksonville; C. H. Horstman, Collinsville; F. W. Milke, Milwaukee, Wis.; C. B. Krone, La Grange; and R. E. Ruggles, Moline.

Dr. Austin Smith (M.D.), editor, *The Journal of the American Medical Association*, Chicago: "The Effect of Medical Advances on the World Today."

Dr. W. M. Coffee, La Center, Ky., president-elect, AVMA: "Veterinary Practice" (with illustrations).

New officers of the Association are Drs. C. L. Miller, Oak Park, president; C. R. Collins, Dixon, president-elect; and A. G. Misener, Chicago, reelected secretary-treasurer.

Accommodations, entertainment, educational exhibits, and the annual banquet, as well as the outstanding scientific program, combined to make this convention one of the best in the history of the Association.

S/A. G. MISENER, Secretary.

Chicago Association.—Dr. W. W. Armistead, School of Veterinary Medicine, Texas A. & M. College, College Station, spoke on "Animal Surgery" at the February 14 meeting of the Chicago Veterinary Medical Association in the Palmer House. Dr. Armistead is taking special work in surgery at The Ohio State University, Columbus, and recently presented a paper on sutures and suture materials at the Indiana State Veterinary Medical Association.

S/ROBERT C. GLOVER, Secretary.

Corrigendum (Chicago Officers).—Dr. P. J. Meginnis, Cicero, is the new president-elect of the Chicago Veterinary Medical Association; not Dr. C. L. McGinnis, Peoria, as reported in the March JOURNAL.

Dr. Pratt Appointed to Veterinary College

Staff.—Dr. Donald W. Pratt (ISC '43) has been appointed to the staff of the University of Illinois College of Veterinary Medicine. He will be an instructor in the department of veterinary Pathology and Hygiene. For the past four years, Dr. Pratt has been in general practice in Joliet, Ill., and Indianapolis, Ind. He was previously employed as veterinary field inspector, Illinois Department of Agriculture, and as transportation veterinarian for UNRRA, transporting horses to Europe. Dr. Pratt is a member of Phi Zeta and of the AVMA.

Veterinary Public Health Challenge.—The *Illinois Health Messenger* for Jan. 15, 1950, devotes the entire front page, as well as an additional page, to the story of the role of veterinary medicine in public health and also discusses the state health department's program. It includes a report of the joint meeting of veterinarians and health officers Nov. 16-17, 1949, pointing out how the veterinarian is fitted by training and education to participate in control and prevention of animal diseases transmissible to man and for the development and maintenance of practices contributory to health.

Dr. Pickard Joins Livestock Loss Prevention Board.—Because of the increased activities of the National Livestock Loss Prevention Board, Dr. J. R. Pickard (KSC '45) has been chosen as assistant general manager in charge of the work dealing with the reduction of livestock marketing losses in transit and from bruising.

Dr. Pickard was graduated from the University of Illinois College of Agriculture in 1940 and was employed during the next three years in livestock extension work in Macoupin and LaSalle counties in Illinois. After receiving his D.V.M. degree, he practiced at East St. Louis, where he had his own animal hospital.

S/H. R. SMITH, General Manager,
National Livestock Loss Prevention Board.

Dr. Fishbein Joins Editorial Staff of Blakiston Company.—The Blakiston Company, medical and scientific publishing affiliate of Doubleday & Company, Inc., announces that Dr. Morris Fishbein, formerly editor of the *Journal of the American Medical Association*, became consultant medical editor for both the Blakiston Company and Doubleday & Company, Inc., on Dec. 1, 1949.

Indiana

Ninth District Association.—At a meeting in Scottsburg on Feb. 3, 1950, the Ninth District Veterinary Medical Association elected Drs. H. F. Lopp of Salem, president; E. W. Spieth, Jeffersonville, vice-president; and L. A. Clark, Bedford, secretary-treasurer.

Dr. Roy Elrod, state veterinarian, discussed "Regulatory Programs and Procedures."

S/JOHN L. KIXMILLER, Resident Secretary.

Tenth District Association.—The Tenth Dis-

strict Veterinary Medical Association met on Feb. 16, 1950, at Buckley's in Cumberland. Dr. A. G. Madden, Madeira, Ohio, told of his experiences with "Foreign Bodies and Impaction," using motion pictures to demonstrate the handling of many cases, especially in rumenotomy. A lively discussion followed the picture. President Oldham appointed Drs. M. E. Clark and W. C. Jackson as a program committee for the next meeting.

Twenty-five veterinarians and their wives were present at the meeting.

The women were entertained by Mrs. R. A. Showalter of Cumberland.

s/JOHN L. KIXMILLER, *Resident Secretary*.

Southwestern Association.—Officers of the Southwestern Indiana Veterinary Medical Association are Drs. Olen Pumphrey, Ft. Brauk, president; M. S. Sheehy, Washington, vice-president; and J. H. Lowe, Mount Vernon, secretary. Drs. Boyd Tucker, Joe H. Lowe, and B. F. Mauck, Jr., served on the program committee for the March meeting.

s/JOHN L. KIXMILLER, *Resident Secretary*.

Small Animal Clinic.—A small animal clinic sponsored by the Northeastern Indiana and Wabash Valley veterinary medical associations, was held in the Honeywell Memorial Building in Wabash on Feb. 15, 1950. The program follows.

Dr. Eber Allen, Fort Wayne: "Demonstration of Parasites."

Dr. Edgar Wright, North Manchester: "Sutureless Spaying of the Bitch."

Drs. Eber and Bertram Allen, Fort Wayne: "Application of the Kirschner Splint."

Dr. V. K. McMahan, Fort Wayne: "Intra-medullary Pinning."

Dr. F. M. Williamson, Bluffton: "Anesthesia, Restraint, and Euthanasia."

Dr. Forrest McClead, Fort Wayne: "Use of the Gastroscope."

Dr. Clark Waterfall, Columbia City: "General Practice Problems."

Dr. B. F. Klotz, Peru: "Skin Problems."

The 36 veterinarians in attendance and their wives enjoyed a banquet and entertainment after the clinic.

s/JOHN L. KIXMILLER, *Resident Secretary*.

Board of Directors Meet.—The Board of Directors of the Indiana Veterinary Medical Association met Feb. 19, 1950, at the Severin Hotel in Indianapolis to discuss public relations. Present at the meeting were Drs. Wade Garverick, Zionsville; E. W. Speath, Jeffersonville; Paul Wallace, Cynthiana; M. Coble, Columbia City; Roe King, Sheridan; C. E. Hafflich, Markle; L. M. Andres, Remington; L. O. Fish, Spencer; W. Wiesner, Goshen; H. D. Carter, Fairmount; M. E. Clark, Boston;

and C. Harvey Smith, Crown Point, president; G. R. Oldham, Kokomo, vice-president; and C. Don Van Houweling, Chicago, representing the AVMA.

s/JOHN L. KIXMILLER, *Resident Secretary*.

Michiana Association.—At the Feb. 9, 1950, meeting of the Michiana Veterinary Medical Association in South Bend, the following officers were elected: Drs. James Carver, Michigan City, Ind., president; Stanton Williamson, South Bend, vice-president; R. W. Worley, South Bend, secretary-treasurer; and Roy Wescott, Constantine, Mich., president-elect.

The program included a talk by Dr. Luckey (Ph. D.) of Notre Dame University who discussed "Recent Advances in Nutrition."

s/R. W. WORLEY, *Secretary*.

Personal.—Dr. C. R. Donham, head, Department of Veterinary Science, Purdue University, Lafayette, who was confined to the hospital as the result of a heart attack early in January, is now recuperating at his home. Drs. G. M. Funkhouser, Lafayette, and Wm. Albright, Colfax, were also confined to the hospital.

Iowa

East Central Society.—Forty-six veterinarians from 14 counties attended the dinner meeting of the East Central Iowa Veterinary Medical Society at the Hotel Montrose, Cedar Rapids, on Feb. 9, 1950. The program follows.

Dr. Carl G. Spencer, Mobridge, S. Dak.: "Enforcement of Livestock Disease-Prevention Laws."

Mr. John Koker, Waterloo: "Insurance for Veterinarians."

Dr. John B. Herrick, extension specialist, Ames: "Temporary Bovine Fertility." Dr. L. Proctor, Oelwein, led the discussion. Other participants and the phases they discussed are Drs. A. R. Menary, Cedar Rapids, "Embryonic Death"; F. J. Crow, Iowa City, "Hemorrhage Following Insemination, Natural and Artificial"; James W. Pirie, Cedar Rapids, "Trichomonad Infection"; R. E. Savage, Monticello, "Protozoan Infections"; M. C. Larson, Keystone, "The Effect of Long Journeys on Bulls"; John W. Carey, West Liberty, "Benefits from Cutting the Bull Ration"; H. E. Hanna, Springfield, "Interrupting the Heat Cycle with Lugol's Solution, Stilbestrol, and Expressing Corpus Luteum."

Dr. Birk C. Lowther, Hopkinton, showed a sound film on rabies. In the ensuing discussion, Dr. Warren E. Bowstead, Lowden, told of a cow infected by a rabid skunk with early mouse tests negative, later positive. Drs. H. N. Strader, Marion; Wm. S. O'Brien, Ryan; and S. G. Paul, Clarence, also gave case reports on rabies.

Dr. David H. Ungs, Dyersville, spoke on

"Business Methods for the Veterinary Practitioner."

S/WAYNE H. THOMPSON, *Secretary*.

Kansas

State Officers.—Officers elected at the forty-sixth annual meeting of the Kansas Veterinary Medical Association on Jan. 30-Feb. 1, 1950, are Drs. F. L. Hart, Hiawatha, president; E. J. Frick, Manhattan, vice-president; and O. W. Morris, Parsons, reflected secretary-treasurer. Dr. T. J. Leasure, Lawrence, was named to the Board of Directors to replace Dr. I. W. Conger.

Governor and Mrs. Frank Carlson and Dr. W. M. Coffee, La Center, Ky., president-elect of the AVMA, were guests of honor at the annual banquet, attended by 400 veterinarians and their wives.

S/CHARLES W. BOWER, *Resident Secretary*.

Louisiana

State Officers.—Officers elected at the nineteenth annual conference for the Louisiana Veterinary Medical Association are Drs. C. M. Heflin, Baton Rouge, president; W. S. Hornsby, Lafayette, vice-president; and R. B. Lank, Baton Rouge, secretary-treasurer.

S/R. B. LANK, *Secretary*.

Massachusetts

State Association.—The annual meeting of the Massachusetts Veterinary Association was held at the Hotel Statler, Boston, Jan. 25, 1950. Following a social hour, dinner was served, and Vice-President John Murphy introduced several guests and then opened the business session.

The following officers were elected: Drs. John J. Murphy, Jr., president; W. E. Merrill, Lowell, first vice-president; William Johansen, Somerville, second vice-president; and C. L. Blakely, Lexington, secretary-treasurer.

Dr. Raymond Fagan, U. S. Public Health Service and research fellow at the Harvard School of Public Health, discussed "The Immunological Status of Rabies in the Light of Present Experiments." A lively discussion followed his presentation.

S/C. LAWRENCE BLAKELY, *Secretary*.

Missouri

Kansas City Association.—Talks by home talent were the feature of the February 21 session held at Hotel Continental. "Economics of Small Animal Practice" by Fred B. Ogilvie, "Office and Dispensary Management in Large Animal Practice" by Frank H. Suits, and "The Slow-Paying Clients" by J. L. Jones, and W. H. Mowder leading the discussion on these secular problems.

S/K. M. CURTIS, *Secretary*.

Montana

Dr. Marsh Visits Australia.—Dr. Hadleigh

Marsh, Agricultural Experiment Station, Bozeman, visited Australia for several months at the end of 1948 and the beginning of 1949, stopping off at Auckland and the Fiji Islands on the return journey. He brings back the following news about the veterinary profession in the antipodes. Elsewhere in the JOURNAL are published clinical and nutritional items concerning the livestock in Australia.

The number of private practitioners of veterinary medicine in Australia is relatively small and the state work is correspondingly well developed, largely at the state level rather than federal. In Australia, the universities do not give degrees in animal husbandry and the veterinary course is the only degree course which includes training in animal husbandry.

The federal government does not have an organization corresponding to the U. S. Bureau of Animal Industry, but disease control is carried on by the Division of Veterinary Hygiene of the Department of Health of the Commonwealth of Australia. Research work is done by the Council for Scientific and Industrial Research, in the Division of Animal Health and Production and the Division of Biochemistry and General Nutrition. Pathology, bacteriology, and parasitology are, in the Division of Animal Health and Production which operates the Animal Health Laboratory at Melbourne, the McMaster Animal Health Laboratory at Sydney, and other laboratories and field stations. The Division of Biochemistry and General Nutrition has done most of the work on cobalt and copper deficiency and the basic work on digestion and nutrition in sheep.

In New South Wales, the state veterinary service has developed more extensively than in the other states. The disease-control phase of the work of the Division of Animal Industry involves the investigation of disease outbreaks, inspection of stock coming in from other states, instituting preventive and therapeutic measures when necessary, testing cattle for tuberculosis and brucellosis, meat inspection, and so forth. There is no regulatory control of brucellosis but vaccination for brucellosis using strain 19 is advised and encouraged. There is no general program for the eradication of tuberculosis, but several tuberculosis-free areas have been established and cows supplying raw milk to the principal cities must be free from tuberculosis.

Nevada

State Association.—The annual meeting of the Nevada State Veterinary Association was held at Reno on Feb. 13-14, 1950. The following scientific program was presented.

Dr. L. R. Vawter, Reno: "Report on Detroit Meeting of the AVMA."

Dr. E. E. Maas, Reno: "Report on 1950 Meeting of the Intermountain Veterinary Medical Association."

Dr. Harry E. Gallaway, Nevada State Department of Agriculture: "The Halogen Problem."

Dr. W. B. Earl, Reno: "The Development of Animal Disease Control in Nevada."

Dr. Joe F. Knappenberger, Kansas City, Mo.: "Digestive Disturbances of Cattle."

Drs. J. R. Brown, Ely; Joseph B. Key, Reno; and Paul S. Silva, Reno: "Intramedullary Pinning Demonstration."

Mr. Wallace White, Nevada State Board of Health: "The Milk and Meat Sanitation Program of the State Health Department."

Dr. Vince Jessup, Glendale, Calif.: "Traumatic Gastritis" and "Calf Rearing."

Officers elected for the ensuing year are Drs. Warren B. Earl, Reno, president; W. R. Sheff, Reno, vice-president; Edward Records, Reno, secretary-treasurer.

S/EDWARD RECORDS, *Secretary.*

New Jersey

State Officers.—The following officers were elected at the sixty-sixth annual meeting of the Veterinary Medical Association of New Jersey in Trenton on Feb. 2-3, 1950. Drs. J. B. Engle, Summit, president; Elwood G. Fooder, Had-donfield, first vice-president; Amos W. Stults, Hopewell, second vice-president; J. R. Porteus, Trenton, secretary; and Arthur F. North, Somerville, treasurer.

S/J. R. PORTEUS, *Secretary.*

New York

Dr. Zepp Chosen Veterinarian of the Year.—In the nation-wide poll by the Gaines Dog Research Center to determine the outstanding personalities in various branches of American dog-dom in 1949, Dr. C. P. Zepp, Sr., was selected veterinarian of the year for his zealous interest and activities on behalf of animal welfare in and outside his profession, to which he gave unselfish service as president of the American Veterinary Medical Association. Mr. Henry P. Davis, Bridgeport, Conn., was voted dog

writer of the year because of his successful completion of "The Modern Dog Encyclopaedia," and for his keen interest in, and fine magazine writing on, bench show and field dogs.

• • •

New York City Association.—The regular meeting of the Veterinary Medical Association of New York City, Inc., was held in the Salle Moderne of the Hotel Statler, Feb. 1, 1950. Dr. J. Raymond Currey discussed "Cosmetic Surgery" and illustrated his talk with colored motion pictures.

Dr. Gilbert J. Feldman was announced as a new member.

S/C. R. SCHROEDER, *Secretary.*

Ontario

Veterinary Public Health Course.—The School of Hygiene and Veterinary College of the University of Toronto conduct a postgraduate course leading to the Diploma of Veterinary Public Health (D.V.P.H.). The branches taught are public health chemistry, public health education, public health administration, vital statistics, social welfare, bacteriology and immunology, virus infections, hygiene, nutrition, parasitology, and epidemiology. The course runs eight months; the tuition is \$175 and the diploma fee \$20.

Pennsylvania

Keystone Association.—Dr. Mark L. Morris, New Brunswick, N. J., discussed "Small Animal Nutrition and Hospital Feeding" at the meeting of the Keystone Veterinary Medical Association on Feb. 22, 1950, at the University of Pennsylvania School of Veterinary Medicine.

S/RAYMOND C. SNYDER, *Secretary.*

Virginia

State Association.—The winter meeting of the Virginia State Veterinary Medical Association was held in the Hotel Jefferson, Richmond, on Jan. 30-Feb. 1, 1950. President F. W. Witter, Richmond, presided over the meeting. The scientific program follows.

Dr. C. P. Zepp, Sr., New York City, president of the AVMA: "Veterinary Medicine" and "Ear Diseases and Surgery of the Ear" (with illustrations).

Dr. E. P. Johnson, animal pathologist, Virginia Agricultural Experiment Station, Blacksburg: "Glycol Vapors."

Dr. H. K. Cooper, Roanoke: "Safeguards in General Practice."

Dr. F. E. Mullen, Regional Diagnostic Laboratory, Harrisonburg: "Laboratory Technique."

Dr. Francis H. Fox, assistant professor of veterinary medicine, New York State Veterinary College, Cornell University, Ithaca: "Current Problems in Dairy Cattle Practice."

Dr. Wilson B. Bell, professor of veterinary medicine, Virginia Polytechnic Institute, Blacksburg: "Aureomycin in the Control of Mastitis."

Dr. Jerry Sotola (Ph.D.), assistant director,



Fig. 1—Dr. C. P. Zepp, Sr., (right) receives his "Fido" award from Mr. Harry Miller, director of the Gaines Dog Research Center.

Armour's Livestock Bureau, Chicago: "Application of Nutritional Research and Its Value to Volume Production of Livestock."

Dr. Jacques Jenny, associate in surgery, School of Veterinary Medicine, University of Pennsylvania, Philadelphia: "Intramedullary Nailing in Femur Fractures of the Dog" (with illustrations).

Dr. W. L. Bendix, assistant state veterinarian, Richmond: "Latest Developments in the Calf-hood Vaccination Program." Dr. Bell also discussed this subject.

The films "Meats with Approval," "Bovine Surgery," and "Swine Surgery" were shown.

The following officers were elected: Drs. J. B. Woodworth, Waynesboro, president; F. E. Mullen, Harrisonburg, first vice-president; J. S. Landis, Norfolk, second vice-president; Geo. H. Brumble, Jr., Fredericksburg, treasurer; and Harry K. Royer, Lynchburg, secretary and resident secretary of the AVMA.

s/HARRY K. ROYER, Secretary.

Wisconsin

State Association.—The thirty-fourth annual meeting of the Wisconsin Veterinary Medical Association was held Jan. 12-13, 1950, at the Schroeder Hotel in Milwaukee. The scientific program follows.

Dr. T. H. Ferguson, Lake Geneva: "Equine Practice." Drs. R. B. Hipenbecker, Fennimore, and G. A. Gittleman, Hartford, discussed this paper.

Dr. J. E. McDermid, Ladysmith: "Equine and Bovine Stomatitis." This paper was discussed by Drs. C. A. Brandly, Department of Veterinary Science and Agricultural Bacteriology, University of Wisconsin, Madison; and W. R. Winner, federal veterinarian in charge of animal disease control in Wisconsin.

Dr. W. H. Dreher, Shawano: "Bovine Infertility." Drs. S. H. McNutt, Department of Veterinary Science, University of Wisconsin, and W. W. Arzberger, Watertown, discussed Dr. Dreher's paper.

Dr. N. R. Brewer, University of Chicago: "Blood Clotting."

Dr. R. C. Klussendorf, assistant executive secretary of the AVMA, Chicago: "Veterinary Medicine is Progressing. Are You?"

Drs. W. R. Winner and J. T. Schwab, chief, Division of Livestock Sanitation, Wisconsin Department of Agriculture, Madison: "Animal Disease-Control Programs in Wisconsin."

Dr. G. R. Spencer, Department of Veterinary Science, University of Wisconsin: "Systematic Treatment for Mastitis." This subject was further discussed by Drs. Walter Wisnicky, Fond du Lac, and J. E. Lillesand, Verona.

Dr. G. R. Fowler, head, Department of Surgery, School of Veterinary Medicine, Iowa State College, Ames: "Surgery of Large Animals." Drs. S. E. Ferguson, Lake Geneva, and D. R. Edwards, Fox Lake, discussed this paper.

Dr. E. R. Krumbiegel (M.D.), commissioner of health, Milwaukee: "Environmental Sanitation."

Dr. R. L. Kerns, meat sanitation supervisor, Milwaukee Health Department: "Antemortem and Postmortem Meat Inspection."

Dr. Wayne H. Riser, Skokie, Ill.: "Canine Distemper."

Dr. R. E. Witter, assistant professor of veterinary clinical medicine, University of Illinois College of Veterinary Medicine, Urbana: "The Management of Otitis Externa in the Dog."

Dr. Riser was moderator of a panel discussion on "Diseases of Small Animals." Other members of the panel were Drs. R. E. Witter; F. W. Milke, Milwaukee; and E. A. Fortmann, Kenosha.

s/S. B. A. BEACH, Secretary

FOREIGN NEWS

France

Foot-and-Mouth Disease Institute.—An occasion belonging to the notable veterinary events of this period was the dedication of the Institute Francais de la Fièvre Aphteuse by President Herriot of the Republic in the presence of distinguished veterinarians representing 14 countries and various societies of France. The United States was represented by Drs. Osteen and Dunne of the U. S. BAI; Great Britain by Drs. Hudson and Henderson; Germany by Dr. Grieger; Austria by Dr. Schaffer; Hungary by Professor Manninger; Italy by Drs. Sgaratti, Doregetta, and Professor Falchitti; Switzerland by Dr. Graub; Sweden by Professor Allegren; Norway by Professor Aaner; Denmark by Professor Schmidt; Brazil by Dr. Saraiva; and Greece by Colonel Pathy and Dr. Kawer.

The occasion was exceptional also because it commemorated the pioneer labors of the late Prof. H. Vallée on foot-and-mouth disease, which opened the way for its control by vaccination. I thought your esteemed journal would want to put this notable event on your records.—S/CN. M.

Great Britain

War Dogs.—The Royal Army Veterinary Corps not only trains war dogs for the army but also teaches civil law-enforcement officers how to use them in their line of duty. The "mine dogs" are used by police forces for detecting illicit firearms; the "trackers" for tracing escaped criminals; and the "guard dogs" for the purpose their name indicates—in widely scattered countries of the British Commonwealth. Details on the military and civilian use of dogs are faithfully described in the September, 1949, issue of the *Journal of the Royal Army Veterinary Corps*.

Italy

BCG Vaccination of Cattle.—What appears

to be the first step in bovine antituberculosis vaccination as a public service was taken June 4, 1949, by *Società Agraria*. The organizing committee, composed of Professors Alberta Ascoli, Giuseppe Gerosa, and Piero Stazzi, discuss at length the prospect of promising result in the November issue of *La Clinica Veterinaria*. As time goes on, affirming the promising results by the world's foremost phthisiologists based on large-scale usage of the Calmette-Guerin vaccine in children, these distinguished veterinary scientists express their faith in the outcome of the proposed program.

VETERINARY MILITARY SERVICE

Army Veterinarians Prepare New Inspection Guides.—The preparation of the first group in a series of "Standard Inspection Guides" by the Army Veterinary Corps in cooperation with the Quartermaster Corps, to assure the purchase of only the best meats, poultry, eggs, seafood, and dairy products has been announced by Brig. Gen. J. A. McCallam, chief of the Veterinary Division of The Army Surgeon's General's Office.

Inspection of foods of animal origin, which constitutes the major part of the work of the Veterinary Corps, has been based in the past on the experience and judgment of the individual officer conducting the investigation. Through the use of standard guides, it is expected that the inspection of each type of food will achieve greater uniformity of quality and palatability. They will also provide a standard procedure to be followed by all inspectors, regardless of location, so that inspections will be the same in all parts of the United States.

More than 100 guides will be developed, each covering one specific food of animal origin. The first ten, dealing with bologna, sausage, frankfurters, pork sausage, liver sausage, smoked hams, cooked salami, dry salami, luncheon meat, and pork loins have been sent to a number of veterinary officers, all specialists in the field of food inspection, in various parts of the country. When the drafts are returned, the comments of these inspectors will be reviewed, evaluated, and used to revise the final form. They will then be published and distributed to all food-inspecting officers of the Veterinary Corps.

STATE BOARD EXAMINATIONS

Maryland.—The State Board of Veterinary Medical Examiners of Maryland will hold its next regular examination on Saturday, June 17, 1950, at the Medical and Surgical Faculty Hall, 1211 Cathedral St., Baltimore, Md., starting at 10:00 a.m. Candidates must be

graduates of colleges accredited by the AVMA, and must be citizens of the United States. Hulbert Young, Liberty Road, Owings Mills, Md., R.D. 2, secretary.

DEATHS

***Gunter A. Brock** (TEX '41), 33, Dallas, Texas, died suddenly Feb. 20, 1950, of a heart attack. He had been associated in practice since graduation with his father, Dr. W. G. Brock, at 110 Exposition Ave., Dallas. Born Nov. 9, 1916, he attended public schools and graduated from Woodrow Wilson High School in Dallas before enrolling at Texas A. & M. College. Dr. Brock was a member of the Rotary Club, the Texas State Veterinary Medical Association, and was president of the Dallas-Fort Worth Veterinary Medical Association. He joined the AVMA in 1949. He is survived by his father, his stepmother, his wife, one son, W. G. Brock II; two daughters, Barbara and Brenda; and one sister, Mrs. S. W. McBurnett of Rosston, Texas.

Colleagues of Dr. W. G. Brock in the official AVMA family join in expressing their deepest sympathies to the Association's Executive Board Chairman and his family in their bereavement.

J. Leo Gilchrist (KCVC '16), 64, Shelbina, Mo., died Oct. 2, 1949. Dr. Gilchrist practiced in Shelbyville until 1926, when he entered the service of the H. D. Lee Company as field veterinarian. He remained in this position until his death. He is survived by his widow, *née* Anita Welch.

***Carl A. Johnston** (OSU '04), 69, Tacoma, Wash., died of heart attack on Dec. 22, 1949. Dr. Johnston retired in 1946 after serving forty-two years with the federal meat inspection service. At the time of his retirement, he was inspector in charge of the government meat and livestock work at the Tacoma plant of the Carsten's Packing Company. He was admitted to the AVMA in 1930.

Dr. Johnston is survived by his widow, *née* Bertha Scott.

***John D. Jones** (TEX '26), 46, Bastrop, La., died at his home on Dec. 17, 1949. A few years ago, Dr. Jones retired from practice to devote his time to farming. He was a member and past president of the Louisiana Veterinary Medical Association and also served as president of the Louisiana Board of Veterinary Medical Examiners. Dr. Jones was admitted to the AVMA in 1929.

Arthur E. Melhuish (ONT '01), 69, Toronto, Canada, died Oct. 3, 1949, after a two-year illness. During World War I, Dr. Melhuish was in command of the Remount Division in West Toronto.

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An' Related Topics

WATCH YOUR ENGLISH AND OURS

CAPITALIZING (continued)

10) *Names of Breeds (continued).*—Both of the key words contained in the name of canine breeds are capitalized. Write:

Boston Terrier, not Boston terrier
Black and Tan, not black and tan
Gordon Setter, not Gordon setter
German Shepherd, not German shepherd
Japanese Spaniel, not Japanese spaniel
Bull Terrier, not bull terrier

and, of course, the one word names: Boxer, Poodle, Pug, Bulldog, Collie. Also write:

English Hunter, not English hunter
Brown Swiss, not brown Swiss
Quarter Horse, not quarter horse
White Leghorn, not white leghorn
Bronze Turkey, not bronze turkey
Buff Orpington, not buff orpington
Thoroughbred (horse), not thoroughbred
Standardbred (horse), not standardbred.

In the limited space available here, these examples stress the importance of correct usage in the naming of breeds.

11) *Titles.*—All of the words in titles having established names, except prepositions, conjunctions, and articles (a, an, the) begin with a capital letter. Title in this sense comprises:

articles,	departments
associations	divisions
books	government
bureaus	institutions
societies	

or any grouping identified by an established name. Examples:

Clinical Aspects of *Vibrio Foetus* Infection in Cattle (article)
The Iowa Veterinary Medical Association (association)
Bureau of Animal Industry (bureau)
Department of Veterinary Medicine (department)
Colorado A. & M. College (institution)
Association for the Education of the Blind (association)
The Life of Louis Pasteur (book)

In lieu of the whole name of such titles, the Association, the Party, the Institution, the University, the Department may be

(Continued on page 28)

COMING MEETINGS

Notices of Coming Meetings must be received by 8th of month preceding date of issue

Iowa, North Central Veterinary Medical Association. Spring meeting. Warden Hotel, Fort Dodge, Iowa, April 20, 1950. B. J. Gray, 300 1st Ave. S., Fort Dodge, Iowa, secretary.

Oregon State Veterinary Medical Association. Annual meeting. Multnomah Hotel, Portland, Ore., April 22, 1950. Roy H. Peterson, Tillamook, Ore., secretary.

American Animal Hospital Association. Annual meeting. Shirley Savoy Hotel, Denver, Colo., April 24-27, 1950. W. H. Riser, 5335 Touhy Ave., Skokie, Ill., executive secretary.

Minnesota, Southern Veterinary Medical Association. Spring dinner meeting. The Hormel Institute, Austin, Minn., April 27, 1950. George A. Young, Jr., 604 Nicholsen St., Austin, Minn., secretary.

North and South Carolina Veterinary Medical Associations. Joint meeting. Ocean Forest Hotel, Myrtle Beach, S. Car., April 30—May 2, 1950. R. A. Mays, Columbia, S. Car., secretary.

Texas, Third Annual Veterinary Conference. School of Veterinary Medicine, A. & M. College of Texas, College Station, June 8-9, 1950. R. D. Turk, School of Veterinary Medicine, A. & M. College of Texas, College Station, chairman.

Utah Veterinary Medical Association. Annual meeting. Cedar City, Utah, June 8-9, 1950. Edward A. Tugaw, 3015 S. State St., Salt Lake City, Utah, secretary.

Alabama Polytechnic Institute, twenty-sixth annual conference for veterinarians. Alabama Polytechnic Institute, Auburn, Ala., June 8-10, 1950. R. S. Sugg, School of Veterinary Medicine, Alabama Polytechnic Institute, Auburn, Ala., dean.

Idaho Veterinary Medical Association. Summer meeting. Shore Lodge, McCall, Idaho, June 12-13, 1950. Arthur P. Schneider, Room 108, State House, Boise, Idaho, secretary.

Oklahoma A. & M. College. Conference for veterinarians. Oklahoma A. & M. College, Stillwater, Okla., June 12-13, 1950. C. H. McElroy, dean.

Ohio, annual conference for veterinarians. The Ohio State University, Columbus, June 14-16, 1950. R. E. Rebrassier, College of Veterinary Medicine, The Ohio State University, Columbus, chairman.

(Continued on page 28)

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(WATCH YOUR ENGLISH — continued from p. 26)

(COMING MEETINGS — continued from p. 26)

Washington State College annual short course for veterinarians. College of Veterinary Medicine, State College of Washington, Pullman, Wash., June 14-16, 1950. R. E. Nichols, dean.

Montana Veterinary Medical Association. Annual meeting. Finlen Hotel, Butte, Mont., June 19-21, 1950. E. A. Tunnickliff, Bozeman, Mont., secretary.

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Exception: When the maker's name or a part of it appears in the name of the drug, as in Norcalcinat and H-G sulfurea taboleta, it is capitalized.

The first time a drug is named, the AVMA either identifies the manufacturer in a footnote by the use of an asterisk, or writes the manufacturer's name in parenthesis following the drug name.

Wisconsin Postgraduate Conference for Veterinarians. University of Wisconsin College of Agriculture, Madison, Wis., June 21-22, 1950. C. A. Brandy, University of Wisconsin College of Agriculture, Madison 6, Wis., chairman.

American Society for the Study of Sterility.
Sir Francis Drake Hotel, San Francisco,
Calif., June 24-25, 1950. Walter W. Williams,
20 Magnolia Terrace, Springfield 8, Mass.,
secretary.

California State Veterinary Medical Association. Annual meeting. Hotel Claremont, Berkeley, Calif., June 26-28, 1950. C. E. Wicktor, 203 administration Bldg., Union Stock Yards, Los Angeles 58, Calif., program chairman.

Ontario Veterinary College. Refresher course. The Veterinary College, Guelph, Ont., July 5-18, 1950. A. L. MacNabb, Ontario Veterinary College, Guelph, principal.

(Continued on page 30)

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(Continued from page 28)

Michigan State Veterinary Medical Association. Annual meeting. Michigan State College, East Lansing, Mich., July 6-7, 1950. B. J. Killham, Michigan State College, East Lansing, Mich., secretary.

Northwest Veterinary Medical Conference. Annual meeting. Winthrop Hotel, Tacoma, Wash., July 17-19, 1950. J. L. Ellis, 2022 E. 4th St., Olympia, Wash., secretary.

Ontario Veterinary Association. Summer meeting. Ontario Veterinary College, Guelph, Ont., July 19-21, 1950. A. L. MacNabb, Ontario Veterinary College, Guelph, principal.

American Veterinary Medical Association. Annual meeting. The Municipal Auditorium, Miami Beach, Fla., Aug. 21-24, 1950. J. G. Hardenbergh, American Veterinary Medical Association, 600 S. Michigan Ave., Chicago 5, Ill., executive secretary.

Iowa, Eastern Veterinary Medical Association. Annual meeting. Hotel Montrose, Cedar Rapids, Iowa, Oct. 19-20, 1950. N. R. Waggoner, Olin, Iowa, secretary.

United States Livestock Sanitary Association. Annual meeting. Westward-Ho Hotel, Phoenix, Ariz., Nov. 1-3, 1950. Dr. R. A. Hendershott, 1 West State St., Trenton, N.J., secretary.

Cornell Nutrition Conference for Feed Manufacturers. Statler Hotel, Buffalo, N. Y., Nov. 2-3, 1950. F. W. Hill, Poultry Department, Cornell University, Ithaca, N. Y., chairman.

Regularly Scheduled Meetings

Bay Counties Veterinary Medical Association, the second Tuesday of each month. Russell P. Cope, 1205 San Pablo Ave., Berkeley 6, Calif., secretary.

Central California Veterinary Medical Association, the fourth Tuesday of each month. Thomas Eville, Route 1, Box 136H, Fresno, Calif., secretary.

Chicago Veterinary Medical Association, the second Tuesday of each month. Robert C. Glover, 1021 Davis St., Evanston, Ill., secretary.

East Bay Veterinary Medical Association, bi-monthly, the fourth Wednesday. O. A. Soave, 5666 Telegraph, Oakland, Calif., secretary.

Fayette County Veterinary Association, Iowa, the third Tuesday of each month, except in July and August, at Pa and Ma's Restaurant, West Union, Iowa. Donald E. Moore, Box 178, Decorah, Iowa, secretary.

Greater St. Louis Veterinary Medical Association. Ralston-Purina Research Building, St. Louis, Mo., the first Friday in February, April, June, and November. W. C. Schofield, Dept. of Animal Pathology, Ralston-Purina Co., St. Louis 2, Mo., secretary.

Houston Veterinary Medical Association, Houston, Texas, the first Thursday of each month. Edward Lepon, Houston, Texas, secretary-treasurer.

(Continued on page 32)



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Write at once for an application and descriptive folder, as the policy year begins on December 1.

American Veterinary Medical Association

600 So. Michigan Ave., Chicago 5, Ill.

(Continued from page 30)

Illinois Valley Veterinary Medical Association, the second Wednesday of even-numbered months. R. A. Case, 400 S. Garden St., Peoria, Ill., secretary.

Indiana Tenth District Veterinary Medical Association, third Thursday of each month. L. A. Snider, New Palestine, Ind., secretary.

Jefferson County Veterinary Society, Louisville, Ky., the first Wednesday evening of each month. F. M. Kearns, 3622 Frankfort Ave., Louisville 7, Ky., secretary.

Kansas City Veterinary Medical Association, the third Tuesday of each month, in the Hotel Continental, 11th and Baltimore, Kansas City, Mo. K. M. Curtis, 70 Central Ave., Kansas City 18, Kan., secretary.

Keystone Veterinary Medical Association. School of Veterinary Medicine, University of Pennsylvania, Philadelphia, Pa., the fourth Wednesday of each month. Raymond C. Snyder, N. W. Cor. Walnut St. and Copley Rd., Upper Darby, Pa., secretary.

Massachusetts Veterinary Association. Hotel Statler, Boston, Mass., the fourth Wednesday of each month. C. L. Blakely, Angell Memorial Animal Hospital, 180 Longwood Ave., Boston, Mass., secretary-treasurer.

Michiana Veterinary Medical Association. Hotel Elkhart, Ind., 7:00 p.m., the second Thursday of each month. R. W. Worley, 3224 Lincoln Way West, South Bend, Ind., secretary.

Michigan, Southeastern Veterinary Medical Society. Herman Kiefer Hospital, Detroit, Mich., the second Wednesday of each month from October through May.

Milwaukee Veterinary Medical Association. Wisconsin Humane Society, 4150 N. Humbolt Ave., Milwaukee, Wis., the third Tuesday of each month. Kenneth G. Nicholson, 2161 N. Farwell Ave., Milwaukee, Wis., secretary.

Monterey Bay Area Veterinary Medical Association, the third Wednesday of each month. C. Edward Taylor, 2146 South Broad St., San Luis Obispo, Calif., secretary.

New York City Veterinary Medical Association. Hotel Statler, New York, N. Y., the first Wednesday of each month. C. R. Schroeder, Lederle Laboratories, Inc., Pearl River, N. Y., secretary.

Northern San Joaquin Valley Veterinary Medical Association, the fourth Wednesday of each month. I. N. Bohlender, Box 588, Turlock, Calif., secretary.

Orange Belt Veterinary Medical Association, the second Monday of each month. James R. Ketchersid, 666 East Highland Avenue, San Bernardino, Calif., secretary.

Peninsula Veterinary Medical Association, the third Monday of each month. E. W. Paul, Box 866, Redwood City, Calif., secretary.

Redwood Empire Veterinary Medical Association, the second Tuesday of every other month. Charles D. Stafford, Novato, Calif., secretary.

(Continued on page 34)

SWIFT MAKES PARD rich in meat proteins



Every can—a complete "one-dish-dinner"

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(Continued from page 52)

Sacramento Valley Veterinary Medical Association, the fourth Friday of each month. R. C. Goulding, 11511 Capitol Avenue, Sacramento, Calif., secretary.

San Diego County Veterinary Medical Association, the fourth Tuesday of each month. R. J. McFarland, 3621 Jewell St., San Diego 9, Calif., secretary.

Southern California Veterinary Medical Association, the third Wednesday of each month. D. H. McDole, 8674 Melrose Ave., Los Angeles 46, secretary.

South Florida Veterinary Society, the third Tuesday of each month, 8:00 p.m., at the Peckway Skeet Club. Robert P. Knowles, 2936 N.W. 17th Ave., Miami, Fla., secretary.

Tulsa Veterinary Medical Association, the third Thursday of each month, 8:00 p.m., at the Tulsa Hotel. R. S. Todd, 1222 S. Lewis, Tulsa, Okla., secretary.

New Staff Member at Fort Dodge

Dr. R. L. Williamson (OSU '42) has joined the staff of Fort Dodge Laboratories, Inc., as a special representative. Dr. Williamson, formerly in general practice at



Dr. R. L. Williamson

Essex, Iowa, is a son of the late Dr. E. C. Williamson, a veterinarian of Montpelier, Ind., and a brother of Dr. F. M. Williamson, in veterinary practice at Bluffton, Ind.

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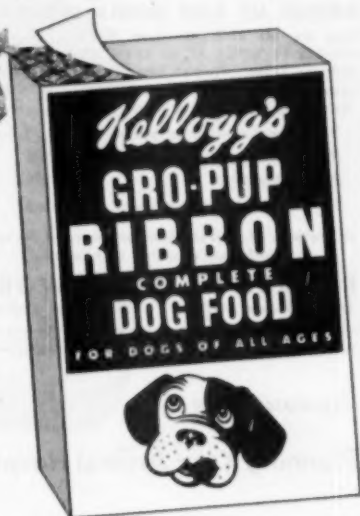
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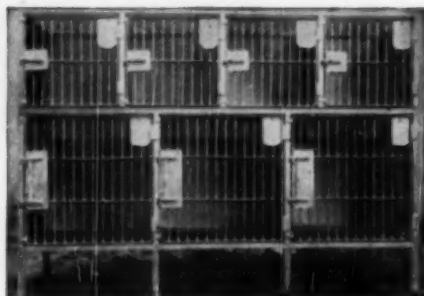
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Protein (Minimum) . . .	25.0%
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Carbohydrates (Minimum)	50.0%
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Ash (Maximum)	9.0%

Vitamin Potencies per pound

Vitamin A	3500 I. U.
Vitamin D	1725 I. U.
Thiamine	1.0 mgs.
Riboflavin	2.5 mgs.
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Veterinarian wanted for exclusive small animal practice in Chicago area. Give all details in first letter. Address Dr. M. J. Skala, 26 N. Skokie Valley Rd., Highland Park, Ill.

WANTED—veterinarian, single, in mixed practice; one with dairy work preferred. State salary expected and experience. Address Barrett and Noonan, 490 E. Cuyahoga Falls Ave., Akron 10, Ohio.

Chicago small animal hospital is in need of an experienced, young veterinarian. Must have small animal hospital experience. In first letter, state college, year graduated, religion, experience, and starting salary expected. Address "Box T 14," c/o Journal of the AVMA.

WANTED—reliable veterinarian to assist in small animal hospital for the summer season, possibly longer. Send qualifications to Dr. John Nickerson, 28 Long Ridge Rd., Stamford, Conn.

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Wanted—Practices

WANTED—to buy or lease, small animal or mixed practice in New Jersey or Pennsylvania, or position leading to ownership in near future. Give details. Address "Box T 9," c/o Journal of the AVMA.

(Continued on page 58)

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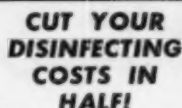


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(Continued from page 36)

WANTED PRACTICE—Veterinarian, age 33, six years' general practice, five years' experience with racing Thoroughbreds, desires position leading to purchase of mixed practice in climate suitable for asthmatic child. Prefer western states. Address "Box T 6," c/o Journal of the AVMA.

Wanted—Positions

Veterinarian, Ontario graduate, Christian, one year's experience with small animals, desires position leading to partnership or ownership. Has Connecticut license. No geographic preference. Address "Box T 2," c/o Journal of the AVMA.

1950 graduate desires assistantship with a future in large animal practice or good mixed practice. Experienced in swine and beef cattle. Midwesterner, veteran, 28, married, 2 children. Not afraid of long hours and hard work. Address "Box T 5," c/o Journal of the AVMA.

Graduate veterinarian, single, age 30, with five years' experience, desires position as assistant in mixed animal practice or in a college. Address "Box T 10," c/o Journal of the AVMA.

Veterinarian, graduate from European universities, ten years' experience in small and large animal practice, is searching for employment, possibly as an assistant or anything in related line. Address Dr. J. W/uk, 1857 Echo Park Ave., Los Angeles 26, Calif.

Lithuanian veterinarian, 43, single, with fifteen years' experience, wishes position as assistant or any other associated field. Speaks little English, but fluent Lithuanian, German, Polish, and Russian. Address "Box T 11," c/o Journal of the AVMA.

Veterinarian, former D.P., graduated in Lwow, Poland, 1933. Will accept any work with an American veterinarian. Has experience in diverse

kinds of practice. Address Dr. George Cehelsky, 635 N. 7th St., Philadelphia 23, Pa.

POSITION WANTED—by graduate, licensed veterinarian. Experienced, small and large animals. Prefer general practitioner or animal hospital. Age 26, single; has car. Will travel anywhere. Address "Box T 13," c/o Journal of the AVMA.

Lithuanian veterinarian, 43, single, fifteen years' experience formerly in Vienna, desires assistantship in mixed or small animal practice; preferably South or Southwest. Address "Box T 12," c/o Journal of the AVMA.

WANTED ASSISTANTSHIP—Mixed or small animal practice. Graduate May, 1950, AVMA-approved college. Resident of New England, veteran, age 30, married, 2 children. For experience, references, address "Box T 15," c/o Journal of the AVMA.

Young veterinarian offers part-time assistantship to busy, modern animal hospital in Washington, D.C., Maryland, or Virginia. Limited experience, but willing to work hard. Best references. Address "T 16," c/o Journal of the AVMA.

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FOR SALE—Old, established, thriving eastern Iowa general practice. Swine, dairy cattle, sheep, poultry, and pets. Territory rich in livestock. Good, prosperous farmers. Address "Box T 8," c/o Journal of the AVMA.

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FOR SALE—Established, growing mixed practice in agricultural section of Pennsylvania. House with hospital attached. Three acres of land. Beautiful locality. Price \$15,000. Address "Box T 4," c/o Journal of the AVMA.

FOR SALE—General practice, mostly dairy cattle, in a small town in fine dairy section in the Pacific Northwest. Includes modern, 4-bedroom home and two city lots. Good reason for selling. Full particulars gladly furnished to interested veterinarians. Address "Box T 3," c/o Journal of the AVMA.

FOR SALE—Growing dog and cat clinic in 3-room apartment. \$1,500.00. Hospitalization place available. Address Aachen Veterinary Clinic, 566 Eagle Ave., Bronx 55, N. Y.

FOR SALE — Well-established mixed practice. New, fully equipped small animal hospital for 60 patients; beautiful home in connection. Outstanding small animal practice with ample large animal work.

(Continued on page 40)



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(Continued from page 38)

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MY FRIEND and I were picking the ponies one day when I started telling him about a *sure thing* I heard about.

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"Yep," I replied.

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"Not a bit," I replied. "In fact, the government very much approves..."

"Our government approves of a horse who can't lose..."

"Who said anything about a horse?" I asked.

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"For every three dollars you invest in U.S. Savings Bonds you get four dollars back after only ten years. And if you're a member of the Payroll Savings Plan—which means you buy bonds *automatically* from your paycheck—that can amount to an awful lot of money when you're not looking. Hey, what are you doing?"

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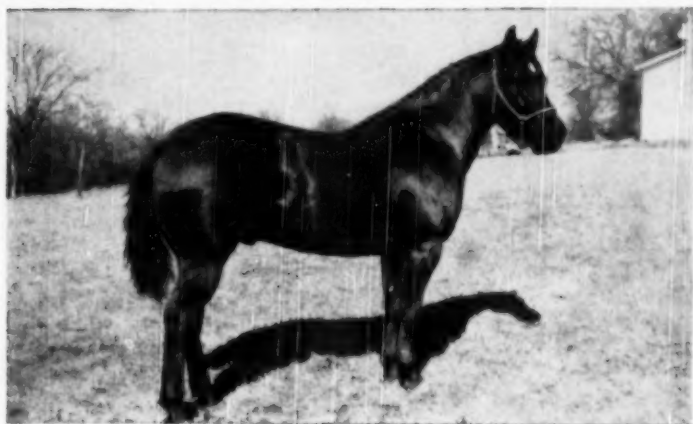
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ANTHELIN is an entirely new drug, synthesized through exclusive and extensive Jen-Sal research.

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